Mac user loyalties under stress

H ow could a company with brilliant engineers, wonderful technology and a fiercely loyal following make such a

That'e the question fans of Apple Computer, Inc. technology were asking last week as Chairman Juhn Sculley packed his bags and left Apple in the throes of perhaps the biggest hnological and spiritual crisis in its 17-year history.

Although Sculley left Apple in a state of disrepair - its carpings down, stock under water, top executives departing and ciptosh an increasingly tough sell against the DOS/Win-

By Johanna Ambrosio and Thomas Hoffman

hardware businesses, observers said.

IBM consolidated its services under one virtual roof last week, a move that may finally put

some muscle behind the company's longtime goal to durive more of its revenue from non-

The new services group will also help the

company get closer to its customers. It will, for

example, provide IBM's sales force with even

Customer support

to low-cost

IBM blends services to strengthen sales

Hanging tough in a random survey of nearly two dozen corporate sites last week, none said they planned to leave the Macintosh. Twe never met anyone who

ment from a PC to a Mac and

went from a PC to a Mac and then switched back. It only hap-pens at gunpoint," said Valerie Tokumoto, who helps menage more than 1,800 Macintoshes as a member of the tech staff at The Aerospace Corp. Macusers, page 6

more industry-specific knowledge about our

help resolve long-standing complaints from many shops that IBM salespeople have lost

and other related functions for the North Am

touch with their needs. The move more tightly connects IBM's out-sourcing, consulting, technical, educational

You so shore III Boot of market III

6 XC

mers' businesses, sources close to the company said. As such, the restructuring could

information systems mans who embraced Apple ter

ogy still display a brand loys that rivals that of Harley-Day

CA to reveal plan to manage mixed nets

Unicenter goes client/server: OS/2 first port

"If we can

centralize a lot

of those

management functions ...

that would be a

bighelp."

-Gary Graham

Home Oil Co.

mputer Associates al, Inc. this week will disclose as to deliver client/server ver-as of its CA-Unicenter systems

CA's client/server systems man-assement strategy is twofold. The company is developing clients er versions of CA-Unicenter to man-

age several specific distributed ing IBM's OS/2, Microsoft Corp.'s Windows NT, Novell, Inc.'s Net-Ware and Unix

Ware and Sun Inc.'s Solaria. N.Y., software gi-

ant is also buil an OS/2-based Unice that will enable users to manage multiple heterogeneous systems across a network from a single

workstation, according to necessard analysts who have been briefed by CA.

nade in Chicago at CA's Systems

Although users said they were excited about CA's heady plans, a anagement tools, given the tech-cal hurdies CA will face in mak ing tink

m, N.H.

CA's Us

has evolved from its mai roots to embrace open sy For example, CA has already d ered a version of CA-Uniced HP/UX Unix [CW, Aug. 8]. W for Sun and other Unix p

will soon enter bets teating

As top PC makers regain edge, cloners lose, price wars wane

mean a return to the days of ardercreases based on com ponent pricing, rath-

IBM, page 8

or than the bloc battles that have

ney, and they can't use price as an attack pon the way they ed to," said Richard

tional Data Corp. in Pressingham, Mass. IDC projects an 11% gain for the Top 10 PC skers this year. Meanwhile, the big

By Michael Fitzgerald

Compaq Computer Corp. and IBM PC Co.'s continuing gains against clone makers have users wondering if the steep price drops of the past two years will soon be a distant memory — like some of the smaller vendors that helped drive

down tags. Analysts project that the Top to PC makers will boost their share by 7% (see chart) to 11% this year

at the expense of smaller vendors. DEBUTTERS CAR-RT SORT SE CR35 MITUZZE 300H0990798

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CIOs tune in to interactive TV

nformation systems executive Roy Prater is a man in a hurry. Prater and other IS chiefs at the nation's media and communications companies are in a few

high-stakes race to install the tuchnoturn the grand vision

pervious into a reality Internative TV, page 160

NEWS

#IBM risks cannibalizing sales of OS/2 2.t to attract DOS and Windown users. Page 4 m Microsoft will formally announce MS-DOS 6.2 this work as a features upgrade. Page 4 Novell answers new MS-DOS with Novell DOS 7.0. It also works to improve poer net-working for corporate users. Page 4

John Sculley's new company could provide spark to jump start Newton. Page 6

nNational Semiconductor moves into net-work adapter and hub market. Page 10 n Novell'a NetWare/IP NetWare Los

Module ships this week, ending need to co between NetWare and TCP/IP. Page 10 for managing object driven suites. Page 12 n IBM puts a good face on third-party sales of APPN and makes major additions to Network-ing Systems product line. Page 14

#HP and Cabletren both ans to their enterprise network manager systems that promise easier, single-con management Page 14

DESICTOR COMPUTING

mintel fixes bugs in Peripheral Component interconnect, and it battles fears that it will make the standard proprietary. Page 45

COMPUTING database and ap tion development skills can't carry you in a cilent/server environ

ENTERPRISE NETWORKING

mATM seems likely to survive as a long-term networking option. Page 71

Table of Contents



s: Steve John and Bill Gates have a lo non but that doesn't mean they have to be nice to each other. Page 100

LARGE SYSTEMS

Digital modulates concentration on Alpha to mber the VAX." Page 87

APPLICATION DEVELOPMENT ■ Client/server tools emerge to handle the crit-

ical chores of configuration management and version control. Page 97 MANAGEMENT

Those headline-making media and com cation firm deals won't amount to much unless industry IS execs can supply the infrastructo for interactive television services. Page 102

IN DEPTH s An excerpt from a soon-te-be-released book details the contentions relationship between Steve Jobs and Bill Gates. Page 109

CAREERS

 Moving into management brings big changes. Page 114

MARKETPLACE

Power customers take open systems claims on faith. Informal testing and use of compati-bility test labs grow. Page 121

COMPUTER INDUSTRY

 Merger of Horizon Strategies and Momen-tum Software creates broad-based supplier of message-oriented middleware. Page 133

COMMENTARY

CPU and storage requirements are shrink-ing fast and that's going to change your job, anys Charles Babcock. Page 6

s John Sculley is an easy target, writes Bill Laboris, but we ought to remember the good

he did at Apple. Page 40

Response mode doesn't work. You can't afford to wait for customer requests, says Dennis Jones of Pederal Express. Page 41

a Giving customers too much information can be bad for business, writes Max Hopper. Page 41

a Software suites are pashing out best-of-breed applications, says David Coursey, not necessarily a positive development. Page 45 n internet discussion groups are deep veins of practical information, and Mary Cronin ex-plains how to mine them. Page 71

Company Index Editorial/Letters to the editorPage 40

Friday Stock Ticker Page 132

inting to implement client/server. The typic of of attacking projects is to attacking projects is to attack togeth a consisting of specialists in various and nod of attacking projects is to attick together a consisting of specialists in various areas—a. PCs and mainframe databases. Working this wasser tool it, say those who have tried. Some reable means has to be found to train 18 staff in all plines and across platforms. Page 53



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strengh notives that can solve all your problem
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UNIX NETWARE OS/2 MVS

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Novell ups ante in peer LANs

By Elisabeth Horwitt

a Novell, Inc. last week released Personal lettifure to go head-to-head with Microsoft Corp.'s Windows for Workgroups 3.11 in the corporate peer networkless market

The preceding generation of peer networking products essentially provided low-end file- and print-sharing services for small businesses that did not want the cost or technical traums of setting up a true network operating system in a

While still serving small businesses Personal NetWare, Windows for Worl groups 3.11 and Artisoft Corp. v LANE tic 5.0 (see chart) also offer corporation an entry-level per networking systefor small sitte that can book into a ful

scale discriberver network whenever uners are rendy. The latest versions of all three products provide the centralized network management, new ediministration and security features agreement, the administration and security features to be a demanding the vendors said. Transanceries of Plannical Services is thinking of implementaging Personal Met-Ware to allow a few users to ording to Cheryl Green's cording to Cheryl Green's at the London form.

A major advantage that revolus her-Ware has over the previous version, Net-Ware Lite, is the Universal NetWare Cliest, which allows neers to do peer-topeer and NetWare client access with the same protocol stack, said Ken Diliberto, network systems specialist for the city of Frenno, Call. NetWare Life had its own

eliest protocol

Reill working While Windows 1 supports Novell's IPX transport protocol, Microsoft is still segotiating with its "rot te right to implement the NetWare client requester on Windows for Workingtons and Windows IX". Whilest the requester, Windows NT, Whilest the requester, Windows NT, Whilest the requester, Windows NT, and Windows Workgroupe clients can access an appli-

quester, Windows NT and Windows for Workgroups clients can access an application, such as SQL Server, on NetWare, but not file or print services, a Microsoft

full- ap	tem to monito			
	Peer	etworkin	g comes of age	
	-	Britani	Street, T	- Partie
(postado (postado (tenegados)	NT, Veres (via Necticus) Necticus (via 1710)	Tes (via Hermes)	Metwork level; controlland administration	\$219.95 for DOS users; \$69.95 add-on for Windows 3.1
and her habe by	Metters	Ves (via SNAMP)	Machine, file and directory level	Sop per single user; bundled with Novell DOS 7.0 (\$60)

on other Personal Netapper indepenat version, DOS
by: \$190 for
closs:

On other Personal NetWare systems.

Password security at
the machine, file and

Both Novell and Microsoft are bundling their peer networking products into their respective deaktop platform Microsoft is positioning Windows for Workgroups as a much more network-espable Windows, and Novell is incorporating Personal NetWare into the soon-to-ship

Novel DOS 7.0. Priced at \$200 for a single-user version bundled into DOS 7.0 (see story at right). Personal NeWarra is a cheap way to get users started on NetWare, said Prauk Dubbeck, president of Communications Network Architects, Iro., a Washington-based committing firm. In continue, Windows for Workgroups \$3.11 is priced at \$251.00 for DOS for Iro.

dows for Workgroups 3.11 is priced at \$219.95 for DOS users. Among the new features that Personal NetWare offers are the following: *Software that allows any Simple Net-

 Software that allows any Simple Network Management Protocol-based system to monitor disk and operating system configuration and

resource utilization on Personal NetWare PCs. Users with no central management system can configure one Windows workstation as a manage-

 A "replicated directory" enables desktope to keep current on resources residing on other Personal Net-Ware excitems. neling DO

I'u ME BOS 5.5 (new sharp) & Whatever for Workgroun that year, Morell will need a well Horell DOS 7.0 Integr th Payment Hot Ware.

two mutitaniting compatition to the temper year mutitaniting DOS application in production function. Unlike Vipulation is, when there mutitanities m

maid John Library, product line manager for Hovell DOS 7.0. Hovell has also developed a Producted Mosta Barvison appli Non progressuading interface d

tens of memory constraint.
The product also comes with
time Membration, i.e. Stackers'
program, which lets soons som
in across metworks and from

Novell DOS 7.8 supports Winown SNS Estimated Mocks, which teems it is compatible with the son-to-ho-released Windows for Perlagaman S. P., Lizmay sold. Howell said the product latticity rill many a 500 price tag. — Ed Spormetii

'Ferengi' arrival raises pricing questions

By Ed Scannell

While IBM's Personal Software Products group may lose some sales of OSC 2.1 to a version with bealt-in Windows emission that is expected to ship next month, the gumble may prove worthwhile if the product structs enough DOS and Windows users.

Code-manned Ferrengi, the alternate version allows Windows and DOS users. to seemlessily super 042: 2.1 hmetionality on top of their voisting operating system software for an introductory price of about \$6.0, ourseen and (CW, Col. 18). Coowersely, the current version of 692: 2.1 has build-in support for DOS, Windows and OS2compatible applications based largely on source code licensed town Memond Characters.

from Microsoft Corp.

Users can today buy a new version of OS/2 2.1 for \$150 or a version of OS/2 2.1 for \$150 or a version that allows them to upgrade to OS/2 2.1 for \$120. Ferengi's \$50 promotional price tag could stall some of those sales, which have shown a share undern in the last

month or two [CW, Oct. 18]. IBM plans to raise the price on

Ferengi early next year to where "it would be more in line with the carrent pricing on OS/2 2.1," nources close to IBM said. But its price would still be less than that of OS/2.2.1.

"We really don't see this [Ferengi] eating into our present sales as much as we see it expanding our chances in the Windows market," and one IBM executive who requested anonymity.

Timing is right IBM believes it has accomplished

is goal of converting over the majority of 602.7 20 users to Version 2.1, and that the timing is right to turn its attention to the much bigger opportunity the Windows samlet represents. There is a bugbase of Windows users to whom we can offer the chance to run their applications faster and more reliably," the executive said. In interviews lant week, infor-

ing both 06/2 and Windows said

they are at least interested in examining the options Forengi gives them. They see the product as a cheep way of keeping up with their name. Windows, amplications de-

cheap way of keeping up with their users' Windows applications domands while preserving their systems configurations. "My users are always saying that there is an amplication ther

that there is an application they used but it only runs under Windows. I think IBM can solve that problem for me [with Ferengi]," said Deems Davis, vice president of iS at Fireman's Fund Insurance Co. in San Francisco.

Fireman's Fund has about 2,700 desktop users of OS/2 with about 100 who use Windows. Some IS executives with Win-

down-based shops who are evaluating Windows NT said they do not believe a product like Perengi offers a compelling reason to switch. "What IBM is selling Windows users is this great [crash] protection. But if you properly tane Windows, there are few problems," and Mike Dries, a consultant and

OS/2 in Tampa, Fla.

tion. But if you properly inne Windows, there are few problems," MS-DGS will uot dispin and Mike Drips, a consultant and beta uner of both Windows and turning off their system

MS-DOS 6.2 won't be a bug fix

By Ed Scannell

Microsoft Corp. this week will formally announce MS-DOS
6.2, featuring several improvements to Version 6.0's com-

pression utility, a SmartDrive caching utility and a new utility that repairs hard disks. Sources said company officials will make a point of saying the release is a features upgrade and not a bug fix to correct problems concerning its DoubleSpace compression utility

and SmartDrive, which some users said caused them to lose data earlier this year. Because it is features upgrade, Microsoft will charge users for the program. While final pricing has not been set, courses close to the company said the cost will be "at least as aggressive" as it was for M5-DOS 6.0, which was slightly

under 80.

Some of the new improvements to DoubleSpace include
DoubleGuard, which protects data against corruption by
verifying data integrity before writing to disk, and the ability to uncompress any DoubleSpace drive or completely un-

install the product.

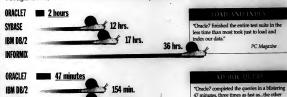
The new ScanDisk utility is able to detect and repair disk

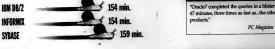
The new Scalabas unity is not to occeed any reparaerrors on both announpressed and DoubleSpace drives. Microsoft has changed SmartDrive so it now loads as a read-only cache by default. If seers enable write-caching, MS-DOS will not display the command prompt until Smart-Drive has writen its eache to disk. This prevents users from turning off their systems before data in memory has been carried.

Gentlemen, start your snails.

PC Magazine independently defined and ran a battery of real world performance tests to compare database server software.

PC Magazine states, "Oracle? was the hands down winner on our performance tests, outperforming the others by a wide margin."









Just to be fair, here's what PC Magazine had to say about the other guys:

Informix OnLine "Only after days and days of repeated crushes were we able to obtain a full set of results" ingres Server "...we would not recommend it because of the showstopping multi-user bug we encountered." Gupta SOLBase "...tock an unthinhable 60 hours to load the tables and then crushed on the index builds."

For your copy of the complete PC Magazine article, including test results call 1-800-633-1071 Ext. 8129.



The incredible shrinking computer

rs of computers and their periphers. sistently packed more and more pow er auto smaller packagen. Many peopos assume we have moved se het down the path to ministurization that few gains repains to be found. Far from being played out, however, this downsizing trend is accessrating.

Raph Merkin, a Xerux PARG researcher in Palo Alto, state, days the saidstrame of the first or second decade in the 21st natury will be the size of a sugar cube and will cancente more in-

ructions per second than today's Cray supercomputers. This means that the glass house, which hosts water-coole inframes and volumes of refrigerance raise disk drives, will rink in something closes to the size of a birdhouse. Closets that ad to combine network hardware and wiring will soon be all

see to consume unverse naturates man, who may a see and a see as a see as a see a se

on cores, or doughnuts, rung by hand, each ring presenting a bit. The ove to magnetic media aled memory to expand metrically and keep exgat a rate of 30% a y predictions this rate



last two years, a rate malysts say can continue at least through the end of the centur. The computer on a chip popularized by the intel 5085 10 years go was fabricated with circuits three microns wide, intel's Penm is a 0.6 micron design; the PowerPC is a 0.65 micron design; d IBM/Siemens recently shipped 64M-bit DRAMs fabricated at

and the Garman rectang suppose these there is some physical limit to how far it though the cited as a state that the characteristic state of the comparison own to the submicron level of a few molecules.

The industry already approaches to chooseles raves in a reven in prevent in the reven in a reven in a reven in prevent in the reven in a reason of the revent for a manner in thick are re-sensed by a four-anamente ableve or already in the revent in the revent in the reason of the revent in the revent et of typing paper. IS directors can assume, then, that footprints will continue to

rink over the next two decades at a pace similar to the one expe-meed in the last two. And once the industry finds itself producing coments whose working parts are a few molecules thick, su-ties like Merkie and Eric Drexier, authors of the 1892 book rejectorie, believe its manufacturing processes will jump to se molecular and atomic level.

Circuits will be laid down molecule by molecule — or more likely

previned in chestical processes that prompt molecules to gather in a preordained path. Droder predicts a storage device will be available in five to 10 years in which a single molecule stores a bit.

resument to tree to 19 years in which a single indicate stores a bit. Law-cost, highly compact compiting power will make the con-uter a universal loot throughout the organization of the future. Oblike competing will coses to be different from any other form, initial of managing machines, the US staff will focus on the data said, trying to maintain some measure of control in the face of a beguinous flow of information.

records a technical editor, the MCI Mail address is 575-2737.

Mac user loyalties under stress

CONTINUED FROM PAGE 1

located in El Segundo, Calif. Just because users aren't going to budge doesn't mean they don't have comple two cents worth of advice for Apple. They have

A chief concern is that Apple has its head in the clouds, dreaming of cket-size Newtons and a rillion-dollar marketplace

where the electronic and co-That viston diluted its ability to provide goods for tho corporate environment.

Other gripes concern weak support and a crowd-ed product line with little ar differentiation among models. "I think Apple is overestimating our ability to change and upgrade con-

South Pasadena, Calif. "Right now, Apple is going in way too many ons at once," said Eric Jos, manager of IS at BC Hydro in Burnaby, British Colum new Macintoshes is supposed to make Apple's

stantly. We just can't afford the bassic." said Fred Morsheimer, director of MIS at Trader Joe's Co., a specialty food retailer in

with comparable intel Corp.-based computers and also satiste users awaiting the arrival of

PowerPC machines. Several of the new models can be upgraded to the PowerPC chip. "Whonever Apple gives you more being for the buck it knocks off another argument

against the Mac," said Tim Yancy, a unit man-ager at Southern California Edison Co., "Plus we can't wait a year to buy orPC kills two birds with one

> Conversion needed However, topping the list of tough tanks shead for Apple is persuading users to shift to the PowerPC architecture

(see story page 45).

In January, Apple is expected to announce several models based on the Fower-PC 601 chip, which is a colple, IBM and Motorola, Inc

More PowerPC-based systems are expected to ship by March and eventually all Macintoshes will run on the chip, Apple officials said.

The momentous announcements have generated a nail-biting uncertainty among 15 managers. 'It's the traditional legacy question. How are we going to the it into what we have

Sculley move could boost Newton

By James Daly and Joanie M. Wexler

communications company ould ironically prove to be the jump-start needed to drive sales of the Newton personal digital assistant,

> at Apple. Last week, Sculley became chairman and chief executive officer of Specrum Information Techs ogies, Inc., a wireless technology pioneer that holds a patent on technology to allow portable computers to transmit date via cellular telephone networks. The user mobility created

by wireless networks is crucial to the adoption of machines such as the bandheld Newton, a project that Sculley promoted beavily during his last t8 months at

Building blocks ectrum, a \$100 million company that lost \$9.5

million in its last fiscal year, develops chips and software that enable the construction of a widespread wireless network infrastructure, said Vice Chairman Peter Caserts, who relin-

cell interface, which connects to a laptop com John Sculley's move from the top spot at Appic puter bousing any Hayes-compatible modesu Computer, inc. to a relatively unknown tele-and then plugs into a cellular telephone. In its

next iteration, Axcell's un-derlying technology, Direct Connect, will emerge in the form of chips licensed to la top vendors that will fit rig ing to a Spectrum spokes

Spectrum has licensed Axcell/Direct Connect to ATAT and more recently inked liceraing pacts bear-ing codevelopment and mar-keting ramifications with IBM and Rockwell international, inc. (see brief page

Sculley spent much of the past two years at Apple out-ting similar deals, taking criticism for diverting Ap meeting the needs of the business market. Sculley's arrival at Sp

trum startled many analysts who expected h

to wind up with a much larger firm. But one Ap pie insider said the move makes sease because Scalley always considered himself a builder.
Originally, Scalley was brought in to belt

build Apple into a world-class company. He did so, raising it from a \$600 million firm to an \$8



now, how are we going to upgrade?" said Trey Thompson, systems analyst at Citgo Petroleum Corp. in Tuisa, Okia., echoing concurss among his peers. Some are ndering whether the PowerPC will render their current Macintoshes obsolete. Others are confused about the apgrade path to the PowerPC. Clearly, Apple needs to address these issues.

"Moving to the PowerPC, and keep users interested along the way, is absotutely the most critical battle for Apple to said Jean-Louis Gassee, for head of the Apple Products division and currently chief executive officer of Bc, inc., a San Jose, Calif., startup.

Unique burde

Unfortunately, the problems go far desp-er than shifting to a new platform and stem from Apple's raison d'etre—its de-sire to be different. Initially, that meant distancing itself from the herd with its proprietary software, particularly with its once-distinctive interface

But with the enormous acceptance of Microsoft Corp.'s Windows graphical aser interface (GUI), Apple's new CEO, Mi-chnel Spindler, knows he has to take the battle to new ground.

"This is not about the GUI anymore We're way beyond that," Spindler said last week at the Seybold Publishing Con-ference in San Francisco, his first domestie public appearance since be took the CEO role four months ago.

"Good," said Rodney Schmidt, a systems analyst at Eli Lilly and Co. in India-napolis, in response to Spindler. "Apple is to support and integrate itself with the standards, whatever they are and mever produces them "Spindler believes they have to put

their heads down and get down to busi-ness," said Pieter Hartsook, publisher of "The Hartsook Letter," a Macintosh-specific newsletter in Alameda, Calif. "The sling is that they have to get serious and stop fooling around."

Essentially, Apple must become a team player and provide open solutions. And yes, Spindler says that's right there at the top of his list. But again, uners will believe it when they see it.

Partnershtps key A key part of meeting these goals will be

A key part of meeting these goals will be continuing to team up with other compa-nies to expand its technology base. At its Enterprise Computing Conference, for instance, Apple moved aggressively to court corporate customers with news that Oracle Corp. will port its Oracle 7 database to Apple's high-end server. That marked an important milestone on Ap-ple's road to respectability in the corporation, something with which it has tranally struggled.

Another request: "A decent multiplat-form development environment," said Bob Novakoski, a business planner for LAN services at SaskTel in Regins, Saskatchewan. Apple's Bedrock initiative is a step in this direction.

Interoperability issues are getting a ig push an Apple delivers its Apple Open Collaboration Environment (AOCE), a set of application programming inter-faces (API) that promise to link and into

grate disparate applications running un-der System 7. Developers will be able to tap into the power of the extension by

sap into the power of the extension by simply hooking into AOCE APIs. "These kind of moves and partner-ships carry a lot of clout because they legitimize Apple in the eyes of a lot of IS folks," said Robert Anderson, a senior analyst at A.O. Smith Automotive Prod-

uets Co. in Milwaukee.

Apple is also working on fixing its ens with industrial-strength sup-

port. "The problem is that Apple com ng with this great technology, and ry say we have to figure out how to ske it work in the real world," said Matt sen, assistant director for technical vices at San Joaquin Delta College in tockton, Calif. A corporate support ackage stated to arrive last month will not ship until November, sources said.

All these changes may be making ske tics reassess the company. Several acthe Apple fold are rethinking ti The New York acr KPMG Peat Marwick, for instance, h stponed plans to replace its 35,00 facintoshes with Windows imilarly. Westinghouse Save roject has reconsidered its lace 7,200 Macintoshes wi osbes with IBM PCs terms of training and admi

scause the Macintosh is cheaper in U.S. Department of Energy sp



used Space 50 to 80% with the a

• Releasing Space from VSAM and DB2 fil

 Positioning Data Sets by Last Reference Date or User Specified
 Expanding and Positioning the VTOC
 Combining Extents on VSAM, DB2, PS and PO Data Sets Releasing All or a Percentage of Unused Spaduring COMPAKTIOn and Stand Alone
 FASTCPK offers CANCEL Protection and Full Recovery from Job or System crashes

Compare for Yourself —
Send for FREE Report Program which Simulates COMPAKTion on your volum



MONOVATION

TRANCE GENARY NETHERLANDS UNITED ENCOOM NORDIC COUNTRIES

IRM blends service

CONTINUED FROM PAGE 1

nization headed by general manag-ranie Welsh, who remains chairman of IBM's Integrated Syst

Key to the strategy, IBM sources said is gotting all the pieces of the services pie occutrate on the same vertical markets. These include banking, health care, insurance and manufacturing. IBM is also imposing common financial and perents seroes the serbusinesses to provide more cing and to help the com-

With moves like this, IBM is tran tioning toward looking more like a ser vices company," said Bob Djurdjevic, president of Annex Research, a consul tancy in Phoenix. Another reason the move is important, he added, is that it could well "get IBM back into the board-

To get there. IBM's consulting grou tends to work more closely with cur tomer executives on strategic planning

issues. The rest of the services or tion will implement those plans. Provid-ing those kinds of high-level services will enable IBM to rekindle the high-level cus-

IBM, however, is battling a ers' perceptions that some of its service are overpriced and overrated. "We do poet to get service for nothing, we're ng to pay for it," said Randy Aldr nical support supervisor at Pede

mper Insurance Co. in Decatur, Ill. "But IBM's Consulting Group is chary ing about \$130 an hour per consultant for services. We'd like to see that come de to under \$100 per hour," more in line with other service providers, be said.



IBM executives were unavailable for comment because of a news blackout imd until after IBM's third-quarter fi-

news short page 6).

But one eource close to the compa-IBM, saying the comp continues to vest in emovec training in those

and is bring ing in new tal ent Out of the ltants worldwide, b 3,000 IBM cor

tween 10% and 15% have been hired from

tems vice president at a large manuf turing company in the South, said that six months ago be hired two IBM techni-cians — at \$235 as hour for the pair — to convert System/36 software to AS/600 software. "And we had to train them on

the AS/400," he said. Daniel Roberts, pres & Associates Consulting, Inc. in Bedford. N.H., said, "We've been receiving mix feedback from customers on IBM ser-

vices. Nothing's really changed yet."

Others are more willing to give IBM a ance. Although Federal Express Corp in Memphis has not used many onto services, Senior Vice President Dennis Jones said he is impressed with what he has seen from IBM so far and would consider the company for future service

Still, the hope is that IBM will co to derive an increasingly larger percenage of its revenue from software and s vices, and that will probably continue to be the case, particularly with the in-creased focus, observers said.

IBM service revenue for 1962 was an stimated \$7 billion, according to Julie chwarts, an analyst at Dataquest, Inc.

John Jones, an analyst at Sale Brothers, Inc. in San Prancisco, est ed that 1965 services revenue will gre to about \$9.5 billion worldwide, wi



Alves

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-

Another down quarter expected for IBM Analysis do not expect much from IBM's third-quar-ter results, due to be announced tomorrow. Estimates range from a loss of 37 cents per share to about break-even if revenue reaches \$15 billion. For the fourth quarter, traditionally IBM's strongest, analysts exet the company to return to the bi

Objects mix it up with database

Unjects mux it up wird outcomes
Montage Software, Inc. in Emeryville, Chit, Inst
work announced what it calls an object relational da-tabase management system and a concurrent-use
pricing model of less than \$1,000 per user. Montage supports complex object-oriented data types such as image and andio while also providing SQL query calitties, the company claimed

Ellison named in sexual harassment suit Oracle Corp. Chief Executive Officer Larry Ellison was named in a sexual harassment and wrongful ter-mination is wastified last week by Adelyn Lee, a former executive assistant. Lee, who also named Oracle and Craig Ramsey, her ex-supervisor and vice presi-dent of USA commercial sales, in the suit, alleges that dent of USA commercial sales, in the suit, alleges that she was wrongstiply fired soon after breaking off an affair with Edison. Oracle declined to comment beyond a written statement, part of which sald that Lev's disminated was the result of her "unsatisfactory performance and ... complaints about her performance from Oracle managers and ownerses."

French government plans Bull infusion The French government last week proposed an info sion of 7 billion france (\$1.2 billion) for Groupe Bull and said it would be "the last time" it puts money into and said it would be "the last time" it puts money into the troubled company before trying to sell off its ma-jority share. The government also named Jessa-Marie Descarpentries to take over as Bull chairman from Bernard Pache, who sought more government finan-ing, according to reports in the French press.

Fast Ethernet gets boost

A conlition of networking vendors led by Grand Junc-tion Networks, inc. said it will make available this week a specification that will provide users with in-teroperable products for 100M bit/sec. Ethernet net-works. A key benefit of the 100Base-X standard is that it is based on Ethernet's media access control meth-od, Carrier Sense Multiple Access with Collision Deection, which means customers can migrate to Past tection, which means customers can migrate to Peat Ethernet technology without special training. A ven-dor coalition, led by Hewlett-Packard Co. and AT&T. is proposing a Past Ethernet standard based on a new media-access control method called demand priority; which would require training and additional cabling.

SMORTTAKES R. Elton White has announced his plan to dent of NCR Corp. in early 1994. White, 51. joined NCR in 1967 as a price analyst.... The 51, joined NCR in 1967 as a price analysi... The Object Entabases Hazangement Group, a vendor con-sortium, quid inst week it has agreed on a database interface standard. The group usid the specification will provide a single interface for its object database applications... AST Research, Inc. will today intro-duce its first Pentium-based deaktop, the Premmin LX P/60. The Pentium system will be priced starting at \$3,325, with no hard drive and SM bytes of RAM.... Wang Laboratories, Inc.'s management trium was reduced to a duo last week with the resig of Michael Mee, who had been chief financial officer and also noted as chairman of the company's board of directors.... Gateway 2000, Inc. has filed an initial ring worth as much as \$100 million.

More news shorts, p

Software broadens protocol choice

User angst over having to choose between Novell. Inc. a NetWare applications and corporate Internet Protocol (IP) backbones should end Friday when Novell ships long-awaited software that separates applications from

underlying The NetWare/IP Londoble Module (NLM) brings "treedom of choice to the backbone, said Bob Davis, vice president of marketing at Novell's Unix Systesss Group here

The software does this by separating NetWare applications from their native IPX protocol and giving users the option of running them over IP, a widespread — and growing - standard for corporate ide-area network backbones.

This is a product that has long been anxiously awaited by customers with large, router-based

faster in transferring files," Berg dorf said. WANs," said Jay Batson, an analyst at Porrester Research, Inc., a Cambridge, Mass., const

These people tend to be IP-sympathetic." has been working with NetWare TP For example, "We are prot going to be doing Net-Ware/IP here because our longrange plan is to move to TCP/IP over our in-

ternet," Bergdorf, senior internetwork analyst at Cargill, Inc. in Minneapolis. The reason is, "Novell IPX is so chatty over an internetwork." network," despite Novell to home the protocol for wide-area network applica-

One such Novell of-

fort is Burstmode IPX, which allows communicating network nodes to transmit multiple packets before an acknowledgment is sent by the receiving stastandard IPX, which requires an et and clutters up the network.

"We ran tests with Burstmode

IPX, IPX and IP and found IP was

beta customers, said it is likely that "banking and trading floor customers with large investments in Unix will really take a strong look" at the NLM said Bill

He said, for example, that one cus-tomer considered eliminating Net-Ware from its back-office environment to alleviate router tise and "RAM-eram" - desk ues associated with running company decided it needed the en abling aspects of NetWare in the back office and Unix in the front of-

nology officer at NetLAN, Inc., a

vell reseller in New York that

fice, NetWare/IP could solve both problems, Trachtenberg said. NetWare/IP builds on Novell's ef-forts to blend NetWare and Unix environments. The company's 2year-old LAN Workplace, for ex-ample, provides a given workstation connectivity into both Net-Ware and Unix computing communities, though the applications stay specific to the underlying IPX or IP protocols, Davis explained.

National Semiconductor tries hand at adapters, hubs

By Elisabeth Horwitt

National Semiconductor Corp. is expected this week to branch out from its traditional chip business to the comparatively higher-mar-gin network adapter and hub market, with Novell, Inc. providing the ready-made distribution through The chip maker will start out in the low-end Ethernet huh and

adapter market, going up against such entrenched veterans as SCom Corp., IBM and Hewlett-Packard Co., according to Frank Drubeck, president of Communientions Network Architects, Inc., a Vashington consulting firm.

Market newcomer
Analysis agreed that National iconductor is well-positioned to make a splash in the low-end market, particularly given that the dor supplies about 70% of the chips to Ethernet vendors, according to Drubeck. The chip maker's presence should speed low-end hubs and adapters toward becom-ing strictly commodity items, he

od Rivel intel Corn 's entry in-

to the adapter market some years are "did the same thing, devastatthe analyst said. ing the price."

National Semiconductor and Novell will also work together on higher end, higher-speed network technologies, such as Asynchro-nous Transfer Mods (ATM), ana-

Effective alliance The joint clout of Novell and Na tional Semiconductor could has ten ATM's progress toward a truly standard, affordable technology, said Charlie Robbins, an analyst at Aberdoon Group a Routon re-

search firm.

The move is a good one for Na tional Semiconductor, given that its chips represent the bulk of development work behind a given adapter but only about 20% of the profit, Dzubeck said. "They want

Novell and National Semico ductor will also work to integrate Novell's NetWare capabilities on adapters and possibly bubs, ana-lysts said. Novell already has a similar dosl with SynOc munications, Inc. and she

shortly announce yet another deal of this kind with Cabletron Sys-

tems, Inc., said one analyst. The idea is for Net Ware services such as faxing and asynchronou ations, to run directi on and be managed from the hub

Corrections

Due to a reporting error, a story in the Oct. 18 issue incorrectly stated that Cellu-lar One's client/sorver him ing system was built internally. Computer Sciences Corp. built the syste and worked with Celiular One developers to cust it. However, comments about Cellular One's strate-gy were based on the innect

A photo identified as Bob Holmes that run on Page 20 of the Oct. 18 issue was not

A story in the Oct. 11 iss quoted a user as saying that NCB Corp. offers PCs only on a build-to-order basis. NCR, in fact, also offers off-the-

When America's largest utilities develop Client/Server solutions, who provides the resources?

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Office 4.0 facility eases use

STW YORK

help information systems shops goar np with the next seration of highly integrated application suites, Microred strategy designed

make its suite ensier to manage. Microsoft Office 4.0, a suite of applications based on forth-coming apprades of Microsoft applications (see chart), will et Version 2.0 of the Object Linking and Embedding

(OLE) Interface [CW, Oct. 11]. By adding support for OLE 2.0, Microsoft is providing a cility that allows in place editing across multiple applica-ses, a true drag-and-drop protocol for sharing data across ons and a facility through which programming languages can serve as a common macro le

across multiple applications.

To help deal with some OLE management issues, Microsoft has included a Microsoft Office Manager (MOM) facility in Office 4.0 that serves as a program manager for the suite [CW, Oct. 15]. Using this tool, an 18 manager can have thirdparty and custom applications displayed on the same hut-ton bur as Microsoft Office applications.

However, while MOM serves to manage applications on an individual system, Microsoft is also working on a second levof management tools for managing documents.

And finally, Microsoft has included an Object Browser tool in each of its applications, which keeps track of all the OLE 2.0 objects available to a Windows developer.

2.0 objects available to a Windows developer.

"Right now it's kind of daunting. There are so many objects available using OLE: I definitely see room for a more robust object manager on top of the browser," said Pete Clanz, a developer with a large Northwest retail store who has worked with OLE 2.0.

"From a hierarchical perspective, you'll have MOM, then socument management tool and the Object Browsee," said

a document management tool and the Object Browsee," said Mark Kroese, general product manager for Microsoft Of-But while Microsoft has moved to provide n tools for individual systems that use OLE 2.0, industry ana-

lests noted that Microsoft's lack of an enterprise focus is ty to slow the widespread endors a across IS orm

In particular, they pointed out that OLE 2.0 does not allow sers to access resources — data across a network, for example — on other users' systems. For OLE 2.0 to become

sted, analysts said Microsoft will have to provide the ability to transparently access resources that we With objects, you shouldn't have to know where a part

ular object is on the system or network to use it," said John Donovan, an industry analyst at WorkGroup Technologi Inc. in Hausoton, N.H.

We're still in a file-oriented world. Beyond using stuff in the drag-end-drop protocol on your deaktop, most IS shops won't take full advantage of what things like OLE offer until ere are object operating systems on their desktops," said John Faig, an industry analyst at Meta Group, Inc. in Stam-



ple, Directors Mortage Co. in Riverside, Calif., ecently opted for SmartSutte from Lotus Develop Corp. because Lotus applications are better integrated with one another. In contrast, OLE 2.0 is not yet widely supported and will require Directors Mortgage to esser all of its custom applications to support it, said Bob Dingle, vice president of production technology.

"From a technical point of view, O.E 2.0 is a whole new piatform. We're not going to be interested in that until I per-ceive that Windows and NetWare are no longer doing the oh for us. f don't think I'll be worrying about OLE 2.0 for at

least 12 months," Dingle said. In fact, the only OLE 2.0 application that will initially be available from Microsoft is its Word 6.0 word processor.

Short wait for 32-bit programs

Ry Michael Vizard

II Users can expect to see the first 32-bit itera-tions of spreadsheets and word processing applications from Microsoft Corp. in the first half of next year, according to Microsoft Chair-man Bill Gates.

Speaking at the launch of Microsoft Office 4.9 last week, Gates promised that 32-bit versions of the Excel spreadsheet and Word word processor will appear on Intel Corp. systems in the first quarter. In the second quarter, Microsoft will deliver \$2-bit versions of these applications s will run on Windows NT and

The applicat the upcoming 32-bit Windows 4.0, which is the Blow-on product for 16-bit Windows 3.1. While 32-bit versions of these applicat will be able to work with larger data sets and

provide significant speed improvements, most sites are accept to manany perceive users as pro-viding performance overkill.

However, there are a number of applications in the financial and scientific communities that require 25-bit spreadurests to run effectively, according to Don Buarras, president of Buarras-to Particles and Particles (1998).

Consulting Group, Inc. in Sylmar, Calif.

ooted that a client/server appl in which a 32-bit implementation of Excel is the front end to a 32-bit SQL Server database would rovide a buge performance advantage. But only those few who are building gigs.

spreadsheet applications are likely to benefi from 32-bit applications in 1984, noted Danie Gasteiger, editor of the "Spreadsheet Contant" newsletter in Cambridge, Mass. in fact, most vendors and information sys

tems shops are not expected to do any maj-32-bit application work until Microsoft deliver-its first beta release of Chicago in December. But while most other software vendors will wait for Chicago before moving up to 32 bits. Microsoft's need to have a full set of native 32bit applications for NT is driving its efforts,

ATM will start with WANs

By Joanie M. Wexler

in the wake of several Asynchronous Transfer Mode (ATM) developments last week, some analysts and users predicted ications technology is ely to eatch on in wide-area networks

And, they added, the initial role of WAN-capable ATM switches, such as those making waves last week from Motorola Codex, StrataCom, Inc. and others, is tikely to be that of a humongous multi-

Such homes, in an era of corporate transitions from multiple network types to the future ATM network nireans.

would accept various data and voice feeds, aggregate and compress them, and spit them out over one high-speed de ATM. ness, for example, Moto role Codescs \$60,000-and-up 6950 SoftCell ATM Networking Node product. The band width management-oriented WAN device, like many few-end products on the market today, uses compression and traffic prioritization schemes to help nies squeeze more out of their ostly telecommunications links as their ingly dispersed, analysts said.

Traffic patters

The 6950 accepts frame-relay, voice and circuit-switched traffic, compresses it over an internal, Codex-developed cellrelay scheme and spits it out over Tt, innted Services Digital Network or 45M bit/sec. ATM wide-area links, explained Gail Smith, Motorola Codex's dior of worldwide product marketing. Smith estimated a 200% to 300% per-

nce improvement over traditional

time-division multiplexing techniques and a payback period of nine months.
"Codex, with its huge installed base, can do a lot of handholding to migrate

stomers" from myriad net to ATM with the 6950, said Joe Noel, an analyst at Dataquest, inc. in San Jose, Calif. in the case of StrataCom. Inc.'s BPX ATM switch, announced in January and delivered inst week, the mufti-

ptexing function would ATM-only traffic from multiple sites, like the 6950, rather than traffic from a single site. The BPX reties on the conversion of other types of traffic to ATM elsewhere, such as within its own IPX frame-relay device. Noel predicted that the BPX is likely to "be a carrier

switch for a while; f don't think corp networks are up for its borsepower yet."

Some users beg to differ, tho story page 71). For example, John Boyd. ions director at North s System in Weathersfield, Conn.

e BPX on his premises as a win dow into his hybrid prilooking at ATM to be the so lidifying manager of me

ATM standards specif initial speeds of TS (45M bit/sec.) However, today only about 15% of TS networks in the U.S. stretch beyond 500 mBos, the eros point where private T3 speed ATM networks be come cost-effective, said Rick Malone, principal at Vertical Systems Group, a Dedham, Mass., consultan-

cx. This means TS pricing st drop dramatically for wide-ar









Mark Page knows the situation well.
Vice President of Connectivity Products at Sybase, he's helped a long list of customers develop integrated solutions to one of the most significant problems to one of the most significant problems of conversation "Making Connections In upstaling." But your copy, call 1-800-SYRASE-I.

Single-console net control gets boost

ett-Packard Co. and Cal

HP said it will deliver softw that lets notwork managers con-trol TCP/IP and SNA networks om one HP OpenView manage-ont station in first-quarter 1984. Cabletron said it will offer in Norember a version of its Spectrum network management software that runs on top of other manage-ment platforms and allows those tions to manage its not-

rork hardware. The platforms in-lude HP's OpenView, IBM's Net-

w/6000, Novell, Inc.'s NetWare nagement System and Sun Mi-



ed from one console

osystems, l Now I have diffe ent staff managing TCP/IP and SNA nets." said Wayne Bowker, advanced an-



reduce the network bane

ogy department at 3M Co. in St. Paul, Minn. "The benefits of combining are that ultimately we can down on management staff and

use them other pl The HP product is based on tech nology licensed from Peregrine Systems, Inc. Combined with the currently available HP software for NetWare networks on an Open View platform, it allows multipro-

tocol network management from one console, according to David Schwaab, an HP marketing pro-CTRIM MADAGER. However, some analysts and na-

ers contacted said the Peregrine Systems-based node takes up too ed that the 64M to 125M bytes of workstation memory required is not unreasonable for large netonally, HP is working amount of memory required and to

Practical side

Meanwhile, the main benefit to Cabletron's approach is that it allows the hub customer to use the management system it already has in place, said Jill Huntington-Lee, principal analyst at Brandy-wine Network Associates, a conoultancy in Cinnaminson, N.J. Cabletron said it will deliver, lo

the first quarter of 1994, data gu ways that allow the network man agement applications to share in-formation, with Spectrum riding on top as a "manager of managers," as well as the Spectrum 3.0 distributed network manag system in the second quarter.

ging through lots of manuals and Com Serve forms and learning from mis

Good news, bad news for IBM on APPN front

By Jonnie M. Werder

in what could be the kickoff in a sees of bittersweet victories for IBM in its determination to make ens, several communications spanies last week said they have licensed "the next SNA" software from a vendor other than retion Ltd. (DCL) has

been chosen by Cabletron Sys-tems, Inc., Hewlett-Packard Co., Hitachi Data Systems Corp., rex. Telex, Northern Tolecom, Inc. and Unisys Corp. as their vender for Advanced Peer-to-Peer rorking (APPN) source code ICW Oct 187

APPN is IBM's arch migrating hierarchical SNA networks to a peer-to-peer structure that supports new client/server

All aboard DCL rolled out its iteration of

DCL relied out its iteranum or APPN Network Node, which in-cludes routing functions, and its End Node software last spring. Router maker Wellfleet Communiions, Inc. said at the Interop '93 est show that it had bec the first vendor to hop on the DCL

nee of another vendor's IBN code significs an industry bent on freeing the usor community from the potential while the vendor flockings will cost on the bright side: More sources for APPN will probably mean more APPN in user shops, said Marcis

Peters, lead APPN architect at TDLCI did a super job with the

One analyst, Dave Pass vice president at Gartner Group, Inc., a Stamford, Conn.-based conitancy, said he was surprised nat IBM looked on the situation as opening up APPN, "rather than su-

Crucial timing Licensing vendors indicated time

sarket motivations. For examnie. Tom Burkardt, director of IBM tivity products at Cable ron, said that what was important was that the DCL code is "written in such a way that our engineers can port it quickly" to any plat-

Still, It is not clear how much r-term demand there is for APPN. On the one hand, "our level of customer requests for APPN has increased dramatically over the last 10 months," said Don Rosennager at HP.

vee, Burkardt said, the ontrend be sees is smaller SNA ops getting rid of SNA altogether. "I don't see a pattern in larger works; some are stabilizing. asizing er even expandi

SNA shops to get distributed tools

By Joanie M. Wexler WRITE PLAINS N Y

Par-reaching additions to the IBM Networkin Systems product line last week should belp move some SNA shops that are on a distribut computing bender a notch closer to their goa estve petwork.

The IBM moves included bundling a \$174 Establishment Controller, a PS/2 server, an Ethe not switch and a transparent bridge into the IBM 8250 intelligent wiring hub.

Todd Dagres, vice president of com tions research at The Yankee Group in Boston anid he seen the hub-bundling as reflective of anies' moves from controller-attached rinals to LANs. "There is an uncomfort period when you're caught with both the old

"Users want LANcan't give up [SNA's] Smart hub modules: +PS/2 server: Shipping Dec. 31 for \$7,000.

class of service. Dagres explained that because hubs evolved primarily for ment of LAN internet works, collapsing IBM ever into the wiring closet with LAN para-

and the new." be said.

phernalia "at least cans you're not managing two envi In addition, IBM rolled out perfor-

mance and connectivity enhance 3746 Communications Controller Model 900. The 3746 is the "multiprotocol" version of IBM's mainstay 3745 front-end processor. IBM said a new Synchronous Data Link Con

troi line adapter for the controller should yield as much as a threefold throughput improveframe relay on the device.

The 3746 moves "are kind of a sleeper." Steve Romaine, a consultant at Informed Tech nology Decisions, Inc. is Green Farms, Coun Corporate moves to client/server for main ream applications "will require greater file analer rates, and object-oriented processing er, he pointed out

owever the use reducts will depend on individual user com sany network plans. For example, SNA shop uply weaning themselves off mainfran esputing may have no use for the produ

Loral Aerospace Corp. in Newport Beach Callt, for one, is dumping IBM protocols entire by despite the fact that it runs about two-thirds of its traffic over SNA today, said Bill Conley manager of corporate info

oping tan, 28, 1994, for

Jan. 28, 1994, for \$995. Anvitet/a Sockets over SNA Get

running TCP/IP communications applications across SNA nets. Shipping Dec. 31 for \$1,000.

Rather than us

the peer-oriented I said, "we'll pretty bandwidth and go or from there."

IBM also de software for runni TCP/IP applicat

over SNA be —a product imp mentation in the II called AnyNet for letting appli non-native

[CW, Oct. 11]. The jury is still out on AnyNet, "The problem is there are so many choic ople are still at the stage of sorting through

see what makes sense," Romaine said. "BM has to evangelize with AnyNet because copie don't understand it," Dagres added ly for the function is there. But users need proof, delivery and price.

CA to reveal plan for managing nets

CONTINUED FROM PAGE 1

A handful of products available today address low-level systems managem capabilities across heterogeneous environments. These include IBM's Net-View/8000 and Hewlett-Packard Co.'s OpenView network management packages, which are beginning to offer systems capabilities. However, analysts said none are robust enough to meet user

CA's "master console" version of CAter would offer features such as security, storage management, report management and job scheduling management. The master console version will differ from the systems-specific client/server ports of Unicenter in that customers will be able to remotely manare neveral operating systems, such as OS/2. Unix and Windows NT, from a sin-

ete point in the enterprise. CA is expected to deliver the master de product in the next six to 12 months, analysts said. Platform proliferation

Stamford, Conn. Steumark was un of the potential size of the client/server Unix systems management market. Unicenter, which is being designed for OS/2, has been in development for the past year and will enter beta testing in

the next few weeks, with delivery scheduled for early next year, according to Charles E. Phillips, a financial analyst at Kidder, Peabody & Co. in New York. CA's plans to deliver client/server Uni

center products for NT sparked the inter-est of Ronan McGrath, a vice president of information systems and accounts the Canadian Rathroad in Mon-McGrath said the railroad is ple

to NT in the next few years.

"We're interested in viewing a cl server version of Union McGrath said.

A few NetW strong interest in GA's plans. "If we co ralize a lot of those m contraine a lot of those managemer functions, like single user IDs, sing passwords and file management cap ies, that would be a big belp," said Gary Graham, coordinator of data man-agement at Home Oil Co. in Calgary, Al-



New COBOL Source Analyst displays code in colors. Right now we're emphasizing green.

Users said they anxiously await the fruits of CA's labor but have limited ex-

"I can't see it being done easily," said M. Lewis Temares, chief information officer at the University of Miami, who said was familiar with CA's plans. However, Temares said a master con-

sole product would alleviate many of the problems the university faces in having to manage its enterprise from five control points. "A multivender client/server on of Unicenter would be a lifesaver. It would save the university a bundle of aggravation," Temares said.

wering critics

Analysts familiar with CA's plans lauded the vendor for setting its sights on an initintive they described as overwhelming.

yet one that users sorely need. "By introducing a product with a elient/server architecture, CA will anmore a lot of its critics. The market for data center Unix management is rela-tively small, but the market for client

server-based Unix management will be very large," said Igor Steumark, program director for software managem testes at Gartner Group, Inc., in With application development moving off the mainframe, you have to do more in less time. Now, you can!

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Xerox hires Laraine Rodgers Laraine Rodgers is joining Xerox Corp. on Nov. 1 as vice president and chief information officer of U.S. Customer Operations, a unit based in Rochester, N.Y. The post was previously held by the current CiO of Xerox, Pat Wallington. Rodgers in currently director of MiS for the city of Phoenix.

igital's loss larger than expected

gital Substanger than expected gital Equipment Corp. last week surprised ann-sts with a larger than expected \$83.2 million loss for first fiscal quarter, as revenue declined 9% from first fiscal quarter, as revenue decth its first fiscal quarter, as revenue occursed we true the previous year (see chart page 135). The company lost \$106.2 million from operations; product saled dropped 12%, and Digital's excrised business fell 6%. Company executives biamed the results on low de-mand in Europe and negative currency translations but acknowledged U.S. note were down slightly.

New Zenith PCs debut

enith Data Systems will tomorrow announce the est desktops it co-developed with Packard Bell Electronics, according to sources close to Zenith Data. Called the Z-Select 100, it features a range of Date. Cannot use Potential in Processors, Pentium OverDrive upgrade slots, a choice of Ethernet or To-ken Ring, plus preinstalled shells for various network convenient contents. secondary to the sources. Pricing perating systems, according to the sources. Pricing viii start at \$1,000 for a 25-MHz 4568X with 4M bytes of RAM and a 170M byte hard drive, the source said.

Computervision cuts deeper

Computervision Curp., the remmant of the former Prime Computer, inc., hast week said it plans to quit the hardware resale business at the end of this year and cut 2,000 employees during the next its months— a more that will reduce its 4.700-person work force by 43%. Computervision, which got 14% of its thirdarter revenue from hardware sales, has signed a al for primary supplier Sun Microsystems, Inc. to seed to primary support can marked years, and to sell directly to its computer-aided design customers and said it is trying to negotiate similar agreements with other workstation vendors. The company lot \$543 million in the third quarter, including a \$515.8 tillion restructuring charge, as revenue fell from 234.2 million a year ago to \$183.9 million now.

Computer fraud schemer goes to jail Stew Leozard, owner of the Connecticut dairy giant, was sentenced inst week to more than four years in rison and fined \$947,000 for his role in a sephisticatpreson anousled EM4, 200 for marrors in a separational dealers. Here determed that stands as one of the nation's largest-known computer-driven tax evasion cases. Leonard, 63, pleaded guilty carrier this summer to akinaming more than \$17 million in sades from his family's Norwalk, Conn., store by customizing its computational control of the computation o

SHORT TAKES WordPerfect Corp. last week added two paid support programs aimed at large accounts that require dedicated account coordinators and on-site service. ... The NASDAQ Stock Market, law, signed a lee-year, 225 million contract with Unisya Corp. for two Unitery 2000/000 mainframe quatern and services designed to support the stocks market's 500 million share daily reading volume. The mainframes, which will be installed service are NASAMO 2 primary data consier in Yemboli. Come, and fix betting data centure mainframes. The Computer Corp. Teclessed the new Discussion C years of the principle of the computer Corp. Teclessed the new Discussion V family, with prices beginning at 1200, including a color monitor. The Discussion V is based on a range of 480KC, DX and DXX procession and pricing starts as EL 46 with in 2 color monolice. drame systems and a

Compaq makes Windows easier

a Compaq Computer Corp. last week claimed that with its up-coming line of PCs it will remarket software that will make Windows applications easier to use.

Developed by Xerox Corp.'s XSoft division, TabWorks acts as a shell over Windows, turning the PC interface into what resembles a student notebook with tabe. If looks much like the inerface for Lotus Development Corp.'s Orizer or Go Corp.'s reaPoint operating

Officials from Comclaimed that bets usWorks than in Windows' Program This is a much more intui

easy way to do work - plus people are used to the notebook metaphor," said Lorie Strong, Compaq's vice president of portables and software marketing. Strong said TabWorks will appear on

Compaq's upcoming line of com-puters and will eventually ship with all of Compaq's PCs.
Users and beta testers said the
product held interest for thess.
"It's a little more drag and-drop-

oriented than Windows," said Steve Verderber, a systems and hut at Varian Associates, a mak

of medical and silicon

While Compaq has exclusive one-year rights to TabWorks. the program runs on any PC-compa system. Varian's Verorber, for instance. uses a system from a small clone maker Non-Compaq users through Compaq DirectPlus or Com resellers for \$69 (\$96

ofter Jan 1).



PC makers

CONTINUED FROM PAGE 1

paq last week said third-quarter earnings rose 119% to \$107 million, m sales of \$1.75 billion, a 64% increase (see chart page 133). Analysts said they expect the IBM PC Co. to also post uncharacteristically large sales increases in its third quarter. The ValuePoint

line alone has shipped more than 1 million units in the first year. "It shows that top-tier market momentum is definitely growing," said Steven L. Eskinszi, an analyst at Alex. Brown & Sons, Inc.

Several large users contacted ilestrated how the PC Co. and Compaq have regained corporate ac-

"We've definitely moved back, said Paul Bandrowski, manager of advanced technology at Sara Lee Corp. in Chicago. He said his company had been purchasing deaktops largely from CompuAdd Com-puter Corp. and Gateway 2000. Inc., but "as the price gap nar-rowed, we decided it made no " Ila ta oenoa

Similarly, Joseph Barrett, lead technology analyst at Whiripool enton Harbor, Mich., said Whirtpool's desktop purchasing was shifting toward the PC Co.'s ValueFoint line, though Dell Com-puter Corp. and Zenith Data Systems remain on the company's ap-proved vendor list.

Still, many clone makers continue to survive, refuting expectaas that Compaq's low-priced

t962, would kill them off. Secondules such as Zees International Ltd., which posted its fifth consecutive quarterly loss last week, remain in business and, in many cases, report higher sales, aks to overall market growth and availability problems of the

The clone makers "are showing much higher resilience than we thought," said Gian Carlo Bisone, Compaq's vice president of North American marketing.

But executives at top-tier com panies insisted the shakeout will happen. "People like Zees and oth-ers are slowly bleeding to death,

ers are sonty necesing to death, rather than having the precipitous losses we expected," said Michael Winkler, vice president and gener-al manager at Toshiba America Information Systems, Inc.

Still, the shakeout may be a trick

ie. Analysis say the Talwanese who control up to 40% of the world market for PCs, have redoubled efforts to stay in business, despite extremely low margins. They point to moves such as the recent purchase of the Everex Systems, Inc. name and assets by YSide, a Taiwanese-backed consort Everex thus "dies" yet remains alive, and sources said Everex will

introduce a new line Nov. 1. The 456-based desktop line, the Step Plus, will include integrates features such as SCSI and Ether

net. Everex declined comment,
"We're looking purely at price—
Compaq's name doesn't do anything for me," said Rich Davis, a

Bell's Network Technology distri in Secremento, Celif. Davis said Pac Bell's official corporate stan-dard was Hewiett-Packard Co., but they want; his unit bought ma chines from a local systems inte

The major vendors may soon put the squeeze on the ol as top executives at HP and Com-paq stated publicly they expect to introduce \$500 systems next year. "I disagree wholeheartedly that

the price wars are over - I think you'll see price wars well into 1995 until we have the shakeout every body's been talking about," said Boris Elisman, an HP product mar-keting manager.

Do not expect the \$500 name-rand systems to be targeted at orporate users, though. Elisman, for instance, said HP will likely follow a strategy where it will add features to its Vectra lines to keep pricing stable and build lower-priced brands "without the intest

Likewise, IDC said that while prices dropped 13% for desktops and towers and 15% for notebooks in the first half of 1960, price cuts year to have slowed since thou at condition will last throu the first half of next year, when in-tel Corp. in particular is expected to face new price pressures [CW

Sept. 27]. fore have milked all the margin out of their low-end lines, though there may be some movement at the high end," said Brian Clarke, pricing analyst at IDC.

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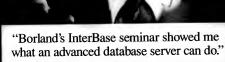
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Lotus, Gupta join to build better Notes

Lotus Development Corp. this week will announce a pact with Gupta Corp. under which Gupta will add Notes support to its

ne of client/server development tools. This will be the first in what is expec ed to become a series of alliances Lotus

pept system makers. The pact between Lotus and Gupta will treus two key gripes of Notes users: the need for both better application de-

ment tools and better integration with SOL database data. Notes application developers will gain access to more sophisticated Gupta tools

tions with a better user interface than Notes offers today "Anything that gives me a tool for creating a better interfe for Notes is going to be welcome," said Norman Weizer, president of Weizer Associates, Inc., a consultancy in Lexing ton, Mass.

Secondly, users have criticized the

workgroup product's lack of integration with data stored in RDBMSs that use SQL ICW. Aug. 161. Connecting Gupta's RDBMS and development tools to Notes would give users a way to build programs that incorporate both traditional row-and table-type data and unstructured data, such as documents and images now

Gapta users, measwhile, stand to gain nes to free-form data types used in Notes applications, such as seamed docts and material stored as images or objects. Gupta's SQLBase already sup-ports binary large objects, but most ers have not exploited that espability to its fullest, a Gupta spokesman said.

Links between SQLBase, the SQLWin dows application generator and Notes are due out by mid-1994, according to a source inside Gupta. Lotus has already delivered the drivers needed to connect Notes S.0 to SQL databases. The drivers

rently protary read and look-up functions between RDBMSs. Fullblown data update, or write are not expe

ed to appear until Notes 4.0 is released in the latter half of next year

Meanwhile, Lotus is talking to seve other tools makers about similar deals, including Oracle Corp., Powersoft Corp. and informix Software, Inc., according to Lotus sources. Taken together, the end sult of all those deals will be the ability to better integrate Notes with existing

Powersoft is expected to san

liar deal before the end of the year, according to Tom Herring, the firm's vice president of marketing and business development, Informix and Lotus have begun "preliminary conversations" about n partnership, "but nothing has been de-cided " anid Steve Sommer, vice president of marketing at Informix.

Meanwhile, Oracle plans to deliver its wn groupware product [CW, Sept. 6]. However, Oracle's approach focuses on integrating enterprisewide applications parison, Notes is a distributed database nimed at PC and users and current ly limited to 1G byte of data

Larry Ellison, Oracle's chief executive efficer, "continues to have dis with Lotus CEO Jim Manzi, but the two have yet to hammer out a tech swap, according to Fred Cutter, vice pres

For a Notes link to be of use to Oracle customers, the product would have to support on line transaction processing. Cutier said, adding that Notes and Oracle databases would have to be "substan-tially integrated, which is more difficult

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MOTOROLA

"It was taking us ten days to get price quotes in a market where prices changed hourly." - Chevron Canada

"Our client, TRW, found that getting information for project planning was simply too slow."

- NetBase Corporation

"Teachers were spending more time on reports than on teaching."

- National Computer Systems

"We had multiple systems from two companies, all with different looks,
all taking data and processing it in a different way."

- Chemical Banks Geoserve Group

"Despite automation, drafting was still a paper intensive process."

- Actua Life and Casualty

"There was no easy way to get critical ticketing information to the PCs on agents' desks."

More and more companies are solving their business-critical problems with Microsoft products and expert

advice from its partners. Here are a

"Changes that took 10 days now take less than an hour." Chevron Canada was in a crisis

few solutions:

fueled by a 20-year-old system. The pricing for its orders was being calculated manually, then sent to a mainframe. But when prices were

deregulated in 1985, the old system simply overheated. Chevron formed a task force of

technical staff and end users. They developed a client-server system that

profitability is up 20% cessed online by 200 users. Price and "Schools applied technology rax adjustments can be handled to cut administrative costs."

many times faster, and paper-handling costs have been cut in half. "Now our client's projects

Visual Basic" programming system,

mation on 300 products can be ac-

Windows NT operating system.

SOL Server, LAN Manager, and the

These days, accurate pricing infor-

can turn on a dime." Aerospace giant TRW approached NetBase, a Microsoft Solution

Provider, to help it manage its projects more efficiently. The problem: Getting project data from the mainframes was expensive and slow.

The education division of National Computer Systems (NCS') had been handed a classroom problem: In public school systems around the country,

teachers were still managing reports

by hand, and losing instruction time.

Basic to build a multiuser system

with a graphical front end, and the

Microsoft FoxPro database for real-

time reporting. The result: Mainframe

expenses were cut by 40% and TRW's

NCS, a Microsoft Solution Provider, suggested a modular system that uses Microsoft Visual C++" development system, FORTRAN NetBase used Microsoft Visual

PowerStation 16, and FoxPro.

With the new Assure" assessment system, educators can assess, track, and report student progress against state curricula and outcomes. And it has lowered costs while increasing flexibility in report generation and the tracking of student progress.

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After a 1992 merger, Chemical Bank's Geoserve Group found itself with multiple computer systems.

Geoserve created harmony by combining the Microsoft Access' database and SQL. Server through ODBC, a database access technology, to generate reports based on customer revenue and product data.

Now business information can be accessed directly by managers, who use it to analyze world markets and find the right financial products for the right customers.

"All the information our drafters need for a booklet is now at their fingertips on a Windows screen."

Aema produced up to 6,000 booklets a year, each outlining a benefits plan for a different corporate customer. The problem: They used dead-end text processing and document management systems to do it.

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As a result, Actna has cut the time required to draft new booklets by more than 115 hours a week, while improving the final product.

"Agents can grab data, work with it, and use it to give customers better service."

In 1992, Air France's ticketing data was in a holding pattern, stuck inside a proprietary database that ran on mid-range equipment.

The airline, in partnership with



MediaServ, a Microsoft Solution Provider, rightsized to a system with Windows NT, SQL Server for Windows NT, Visual Basic, Visual C++, and Microsoft Access.

Now agents can get data easily, and even analyze it on their own. What's more, the system can now be passively maintained by one person, instead of a full-time team of five.

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SPARCs fly in Sun's multimedia lineup

HOUSTAINVISM, CALIF.

The debut of Sun's workstation trio — SPARCstation 105X, SPARCstation 10M and SPARCclassic M — will address spe-

engineer at Loral Space Systems, i.e. in Mountain View, Calif., said they are ex-cited by the idea of upgrading worksta-tions for use with video cameras. Sandeh said he would like to use Sun workstations as deaktop videoconfer-

person ShowMo Hozzae, which includes a video
camera, coste \$5,270, and a three-preson
Howels Beene is prode at \$5,00.
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CIOs brace for health care reform

Clinton health plan will require hospitals and other medical providers to increase their IS budgets

By Allen E. Alter sident Clinton's with care reform an purports to savings and streat og to the U.S. public. But bealth are chief information officers are finding that institut-ing health care rerm will require complex new information systems, a big increase in IS spending and compliance

with regulations oversoon by a deral health care bureaucracy The result? "We may be talking about doubling the annual IS bud-get we now have," said Erica L en, a bealth care IS consultant and vice president at Arthur D. Little, Inc., a consultancy in Cambridge, Mass. Hospitals typi-cally spend about 2.5% to 3% of ir total operating costs on i

More money, more money 'Our message to our boards of di rectors is bad news in times of

stress — more IS spending, long lead times, technical difficulty." Kerry W. Kissinger, a partner at Ernst & Young in Boston, summa-rized at a roundtable discussion on health care reform held at a recent conference sponsored by the Ann Arbor, Mich.-based College of Healthcare Information Manage-ment Executives (CHIME).

Clinton's proposal [CW, Sept. 6] calls for health care providers to te "electronic documentation of all clinical encounters . . . using ogy," among other things (see ex far right).

Therefore, health care organ zations intend to spend a good chunk of cash (see chart above) in the next few years, computerizing patient records and integrating epartmental systems such as rmacy, inboratory and outpu tient systems. They also need to share data with other providers, the federal government and the "regional health altiances" that will negotiate with provide der the Clinton plan.

Completing projects of this m nitude has health care ClOs won dering where the funding for these projects will come from. Many said the money would come from cuts in physical expansion. ClOs also expect to look to outsourcers and share a community health infor-

Acute-care hessitals and	Same		-
their associated to patient and ambutatory services	\$4.9	\$6.7	37%
Federal government Occupitals and Medicary/Neckcald)	\$1.0	\$1.5	50%
Mayaician offices/Clinics	\$.8	\$1.3	63%
Less acute-care hospitals and other providers	\$.8	\$1.5	88%

don I. Department and Association, Chicago



As the cost concerns t ome CiOs are already creating budgets and planning new invest its to specifically prepare for

th care reform. Harry E. McQueen, CIO of Good erd Medical Center in Longw, Texas, is increasing his IS iget to between \$1.2 million and 5 million in the oext three years from \$800,000 last year. The adonal money will go toward an rprisewide fiber backbone work and will begin to establish hospital information system

sed on opeo standards. This will position us for health re reform so we can be part of

communitywide networks and in-stall an enterprisewide patient re-pository for clinical information," McQueen said, Good Shopherd is a 350-bed medical center that has five outlying clinics and a traus

Grants available

David E. Garets, director of MIS at the 100-bed Magic Valley Regional Medical Center in Twin Palls, Idaho, said he is applying for a National Institutes of Health grant to pay for the development of a prototype rural hospital system. His curre onl espital budget is \$300,000. hut Garets is budgeting "between \$3.6 million and \$4 million over the next four friend years to be able to provide the kind of systems that will put us in compliance" with any likely health care reform. These lude systems that will link physicians and payers and mea-

G. Ward Keever, the senior vice president of information services at the Medical Center of Delaware in Wilmington, said he had just ob-tained funding to establish a clinical repository that will be available to the center's medical staff over an electronic outwork by mid-1994. Keever said the repository will eventually be available to providers throughout the region and will include patient eligibility and payment information.

High anxiety Health care ClOs said they are worried about another clause in the Clintoo blueprint. It states: "Current information systems technology readily supports the capture, retention and electronic data interchange of [medical] enconsider records as a hyproduct of the provision of care and with fa-



able benefit cost efficien Many ClOs disagreed with this statement, fearing it would create unrealistic expectations among health care chief executive of cers, who may wooder why th own IS organic ly ereate such systems.

oon to 15

Despite funding questions, ClOs attending the CHIME conference agreed that besith care reform was certain to upgrade the sta of IS within the health care indus try. "I think this will be a tre dous assist to the IS community said Larry D. Grandia, vice presi-dent of IS at Intermountain Health Care, Inc. in Salt Lake City.

IS executives also point to evidence that shows the payback from these information technolory investments far ontweighs the cost. "Do it smartly and you can easily take 15% out of the cost of care," Drazeo said.

For example, a study conducted at the Wishard Memorial Hospital in Indianapolis found that "a neswork of [Intel Corp. 80386-based] microcomputer workstations for writing all inpatient orders" that provides cost data to physic saved more than \$3 million in charges" at the hospital.

The authors concluded that

such systems could potentially save tens of hillions of dollars if implemented nationwide. The study was published in the Jan. 20, 1993. insue of the Journal of the Ameri over Medical Association.

A bounty of bureaucracy

tions and a network of comp ers that will directly afet the health care 18 executive

care plan. It will set on a National Quality

ta they need from providers to eva ate the quality of health care. • National Health Data Advisory Council: charged with specify's

tronic data interchange form and transfer pro *A network of regional computing center will be created to store as well as analyze the data provided by the h

- Allow R Alter



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The Smarticons in 1-2-3 for Windows are smarter and Lotus's approach to swapping different tool-bars in and out beats Excels and Quattro Pros."

PC/Computing 6/93

"1-2-3 LEAPFROGS EXCEL

Lotus's version manager blows away similar features in Excel and Cuattro Pro* Walter S. Mossberg, Wall Street Journal 7/29/93

AND UATTRO"

-PC World 6/93

'Users who often collaborate on developing and refining worksheet data...will find Release 4 indispensable.'

PC Week 5/3/93

1–2–3 for Windows has always had more powerful database features than Excel or Quattro Pro and now these features are also easier to use." BYTE 6/93

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tiens rately journe to provide in terms and the consider the advantages of Amil Pro's tight integration with 1-2-3° and the other Lotus applications. With Amil Pro, you can not only exchange data, charts and functions with the other applications in a click, you can easily create hot links between applications.

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"AMI PRO

'Ami Pro 3.0 comes close to being perfect. It stands above Word and WordPerfect in both its function and in its speed' 3.0

You can learn to use Ami Pro, the Lotus word processing program for Windows, in about a day Put the manual in a drawer as a first step."

TAKES THE LEAD OVER MICROSOFT WORD AS THE WINDOWS WORD PROCESSOR

Usability, features and performance— Ami Pro is the overall winner' PC/Computing 8/93

Users moving to Windows from DOS can fearlessly choose the latest Ami Pro version. PC World 3/93

Your after year, Lotus* Precisions Graphics* has dominated both Harvard Graphics* and PowerPoint* in Industry awards. This year, Freelance Graphics 201 has again set new standards, viruing top ratings from IntoWorld. PC/Computing. BYTE and Windows Sources.

Historically, building professional looking presentations even with the best software. has been time-consuming work. But with Freelance Graphics 201, its so simple and so fast that people are now punching out charts for small presentations and even for handouts used at informal meetings.

One click is all it takes to access some of the

9

most powerful features in Freelance Graphics, like more than 65 SmartMaster™ design sets, 500 symbols and 100 chart styles. And when you're done, you can turn four-color overheads into black and white hand-outs with just one click.

The integration of Freelance Graphics with other Loba applications is so complete that if you bring your 1-2-3" data into a Freelance presentation, and you later change a number in your 1-2-3 spreadsheet, it will be instantly reflected on the Freelance chart.

For your own live presentation visit your Lotus Authorized Reseller. Or call 1-800-TRADEUP, ext. 9080*for a free full featured working model. By the way, have you ever used a database?

Lotus

ERPOINT 3.0 SCORED HARVARD GRAPHICS 2.0 CORED 80.4" PC / Computing 9/93

**Lotus Freelance Graphics

Microsoft PowerPoint

Software Digest 7/93*

'(Freelance Graphics) ourclasses the competition in features and ease of use.'

"The users in this study were more productive, more effective, and more satisfied with Freelance Graphics than PowerPoint... PowerPoint users took 64% more time to complete their presentations."

Usability Sciences Corp. 3/93

Award-winning Loss® Approach® defines a whole new database category the full powered client /server relational database for the general business PC user. No longer do you have to be a programmer, or think like one to experience the everyday advantages of a relational database.

Now you yes you can build and use your own dusbases are easily as you build and use your own spreadulents. For olses reporting, invoicing project management customer tracking, mailmerge or handreds of other uses. Now PC users can mixty easy, one-click high-performance access to company data stored in all the major formats linckling didAESE Passack's Posthy's Chade' 501, SOL.



Server and DB2**) across all popular networks.

If you've never worked with a Windows™ database.

or if you bought Paradox or Acoss⁵⁴ only to find they were unworkable. Approach will change everything. An independent study found that Approach users are up-to-speed and producing real results in two hours.⁵⁴

And because Approach is designed to share with other Lotus Windows applications using Approach databases to mailmerge with Ami Pro* to share data with 1-2-3* spreadsheets, or to simply report on data is something anyone can do.

What a difference a database makes. Visit your Lotus Authorized Reseller or call 1-800-TRADEUP; ext. 9060° Or get the whole suite and save a few hundred bucks.



To Create cell 1886-CO-LOTUS Thates trade terrescored May 1991 Terrance Monthscanners General Temperate Issue Machine Magnetic selb permission 1993 by CAP Publications bio-COCCERNATION Visional Assessment Assessment and Montes Review College and Montes

"... Approach offers much easier-to-use database-creation tools for individual users and easier access to big-time databases than either Microsoft Access or Paradox/Windows... Approach is a big big winner."

PC Week 6/28/93

UCTIVE

... Approach 20 is one of the few (software) packages... for which it's truly possible to never open the manuals."

USABLE, MICROSOFT ACCESS WILL BE TOO OVERWHELMING FOR END-USERS..."

- InfoWorld 1/17/93

'Best Buy Approach is the simplest and most straightforward relational database.' PC World 6/93

"The most usable Windows relational database ever." PC/Computing 8/93

The new Lotus* SmartSutio** 2 is the most complete desktop solution for Windows* steens. It brings together 1-2-3* Rolosse 4. Am Prof Release 301. Predance Corpities* Release 201. Approach** 2.1 and Organiza** 1.1 at an irresistible price luggrade for just 5209*** [but its much more than a deal or an all-star collection of Windows applications.

The applications in SmartSuite 2.1 are closely integrated sharing a consistent appearance and behavior. This reduces the time it takes for a user to learn each application. For example, the three most used applications in SmartSuite share 26 common SmartSuite share 36 common SmartSuite share 36 common SmartSuite share 36 common SmartSuite share 31 common SmartSuite share 36 common SmartSuite share 31 common SmartSuite share 31 common SmartSuite share 31 common SmartSuite share sha

Far beyond anything possible with Microsoft Office Lotus's integration also simplifies the process of switching between applications sharing information across applications and using functions from one application while working within another.

For example, you can easily edit 1-2-3 charts from within Preciance Graphics. Or use Freelance, 0r 1-2-3 functions within Anni Pro. All work easily with the Approach database. And all support industry standards, so they'll work with otherings from other vendors as well. This makes working in each applicatures from the procing of the process of the p

tion, and the entire Windows platform.

easier and more productive than ever before.

SmartSuite is also designed for working in groups in ways Microsoft Office can't. All applications are

network ready and mult-enabled with ccMail* The results of Working Together* are easily manageable through 1-2-3's Version Manager. And each application features additional enhancements for full

integration with Lotus Notes.***
Unlike Office users SmartSuite
users can call a single toll-free

number for support.

For the whole story, visit your
Lotus Authorized Reseller, Until
12/31/93, you can upgrade from

any Lotus or competitive product to SmartSuite 2.1 for just \$299*** Or for a SmartSuite demo disk call 1-800-TRADEUP.

ext. 9080°

LOUIS Working Together

"LOTUS SMARTSUITE REDEFINES

Lotus now has a top rated product in each of a half a dozen categories. Moreover, Lotus products have come to share a great deal of genuine integration... SaftLuter \$/21/93 When you buy. SmartSuite, the pieces really work together. The point theres never to a battle than charge of principles of the principles

APPLICATIONS SHOULD WORK TOGETHER."

-PC Letter 6/7/93

The level of integration in the SmartSuite makes complicated crossapplication tasks easier for users and less them take full advantage of the Windows environment." Datasasct 6/15/93

Dataquest 0/15/93

'Friends, Romans...

In Julius Caesar, Shakespeare noted: "The evil that men do lives after them. The good is oft interred with their bones."

This may not be the best quote to use when talking sout John Sculley, as be is neither dead nor even deted from the industry (witness the fun we're havearted from the mausery (witness us in an wr o and ga this exposes in the eartoon at right). But since leading stepped down from the top post at Apple earter this month, about the only place you could read of a unique accomplishments was in the press release sound by Apple, Otherwise, he's been roundly castimated by Apple, Otherwise, he's been roundly castimated.

sated for a variety of managerial offenses.
So let's take note here of some of his accomplishments. First and foremost, Apple was a bit player in the business market when Sculley arrived at the commy. Today, it is the only PC company that has had mificant success in the home, educational and

ignificant success in the some mail and large business mark in 1992, Sculley's last full ear at the helm, Apple soid sore PCs than any other comny in the world -- 10% more in the No. 2 company, IBM,

By engineering a partner-nip with Motoroin and IBM to roduce the PowerPC micro-rocessor, Sculley attempted

give Apple a path away from Macintosh line, which had made the con intosh line, which had made the company so that in the past decade, but whose end was in

These accomplishments, meanwhile, took place false Swings and Mary and Mary indexed Again with a culture of different than then not in interest for oncompany straters Sieve John And I you think this is near, sait with a cost of certain or Digital's falsers. Thinner about citure and how tongs it is to change. Ultimasely, if Swings was guilty of anything, it was a same human fruitly that has afficied countries be industry conscious as and the said of the sings of the sin

seans human frailty that has affiliced countries we industry concentree and also struck so neary IS neagers along the way. It goes like this: As executive defines a strategy and the company ins success, perhaps great success. Then the un-rying translated has that made the company suc-erial start to shift, sending out low-frequency sig-city to the structure of the structu to that effect. But past successes cause even the

and, even to reprice the most carriage.

At Apple, as at Compaq under Rod Canton, the concoditization PC hardware rea counter to what had
bade the company so successful. Therefore, it was receted as a strategy, just as the decentralization of the crow as a satisfy, just as the second radiable of the lighty structured glass house of MEVdata processing ras so antithetical to 15 managers in the late 1999s. One could attack Soulley for being profoundly hu-nas. But that certainly does not demean a legacy that aw him guide Apple into the realm of world-class cor-

Bell Labour

Bill Laberis, Editor in chief



Peer-to-peer payoff Contractors sound

Art Olbert of IBM should rec er his thoughts on peer-to-peer networks [CW, Sept. 13]. The current annual sales in that section of the LAN marketplace are more than \$200 million and by 1996 should reach at least \$1 billion.

Currently, more than 50% of all etworks contain fewer than 10 workstations; estimates suggest that this percentage will not change through the end of the century, even though network sales will expand dramatically. Richard F Clouve

New York City

Nothing to cheer

off on competition. clients and costs

garding "Who's a contre IRS cracks down" [CW, Sept. 27]: It is not illegal to be an independ contractor! We are issued 1090s, and they are cross-checked by the

Many companies welcome inde-sendents to compute along with rokers and agencies for con-racts. Most of my clients prefer to deal directly with the person who is doing the work, rather than with someone who is a full-time market ing person adept at flinging buss

words at them.

Your article regarding compute contractors does a great injustic contractors does a great injustace to all independent consultants who are fighting often corrupt agencies for clients. Agencies and brokers take great delight in soning clients into not using the services of an independent con

There are sends of tax-problem cases in which agents have tried to place independents on a 1099 ba-sis with clients in direct violation

of Section 1706 of the tax orde. Because independent consul-tanta can (and do) underbid the tants can (and do) issued the large agencies, the agencies at-tempt to neutralize the competi-tive environment by scaring eli-ents into not signing directly with an independent by claiming the eli-

vices it could get by working with a consultant directly. It is an interesting story the brokers tell con-

> Alan N. Can Vice president lake Publishing Fair Oaks, Calif

Shame on Computerworld for giving voice to those who deal-grate independent contractors. The "groupthink" mentality that says "Hire contractors only

through contracting agencies, which are responsible for paying taxes" implies that independent stractors will cheat if given h

Bureaucrats like Tom Charl an have belped to destroy many all businesses. Worse, they defeat themselves by not considering some of the best independent contractors who refuse to give 30% of dr income to a brok orage firm that provides no value to the cus-

Promingham, Mass.



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Don't wait to be asked

By Dennis Jones

le question, but difficult to lem is that most businesses lay oan't wait for cust dige what it is they want, and that's just as true for the information technology function as it is for busi-ness as a whole. Customers may not even real-

ize they have a problem or a need until it's too late for an acceptable response. Knowing what your customers need before they have time to think about it

day's market. At Pederal Express, we've made it the driving strategy of our business

and our technology team. Along the way, we've discovered some guiding principles:

-Responsivement is not snough. The tradi-tional interpretation of the information techmologies's role is that we respond to users' re-quests and aim to fulfill their expressed needs. This is an outdated idea. We can't sit back and wait for requests. We have to get up, get out and learn so much about our customers' jobs that we are able to see and suggest opportuni-ties for improvement even before they do.

This is done by working with end users as they close their books, make sales calls, sort packages. During peak work periods, informa-

describe the tremendous pressures on business in the 1990s. Some of

them are even printable. Economists
who contemplate tha tides of commerce from the confort of their tenured university chairs can take lottsitions. Some of these are even pertinent.

Shampter coined the term errorited activation of the consonia stratular of the economia stratular to the economia stratular of the economia stratular to the economia of an error social superior desired to the economia stratular to the economia stratula

ter way to get to know the ins and outs of a pro-cess than to take an active part in it.

cess than to take an active part in it.

*All information technology activities must have a business purpose. Our rule is that there are only three good reasons to undertake an information technology project to re-

duce cost, to improve the quality of the compa-ny's product and to in-crease market share. those triple-crown types are obviously the ones we most like to find. But the main objective is never to deploy technology just for technology's sales

nate sources of time and paper. Needless cy-cie time and paper are always sources of

requires a pitcher desire, sowers, occasive felicions are constructed around prerogatives such as taking time and passing paper. Cilent/werve is inevitable, and we can either lead the transition or get out of the way. Whether those in the information technology function like it or not, our users are quickly nowing us out of the glass bouse. We have a braide choice: We can either examination



Jenes is chief information officer at Federal Ex Corp. in Memphis. Federal Express was recent mier 100, a group of companie

The perfect trap

Many businesses owe their current prosperity to imperfections in the marketplace. Soon there may be few places to hide.

By Max D. Hopper

ry. We see service businesses surpassing reg-mented rivais by arming front-line employees with the information to serve customers more flectively indeed, the most aggressive efforts in this arema place the tools in the bands of cus-omers themselves. Like most catalysts, how-omers themselves. Like most catalysts, how-

abled by computerized re that allow travelers to ins

r is chairman of AMR Corp.'s Saler Tech



Even now, Chicago's scofflaws recall the sport warmly.

• You took a parking ticket.
Folded it, Crumpled it Then,
simply booted it away.

• Thirteen thousand parking
tickets written each day.
Maybe, on a charitable day,

HOWA NEW TYPE OF COMPUTER PUT A STOP TO ONE OF CHICAGO'S FAVORITE SPORTS

10 percent paid. * But if you're thinking of playing that same these days, officials have one word of advice: Don't. * Sun' computers have been installed. And they are very, very effective. * Claim the meter was broken, and a Hearing Officer will check a "meter database" on a Sun computer. Protest the ticket ian't yours, and a scanned image of the original is pulled from a database. Yell that you're in a hurry, and all these

jobs can be done at once, because Sun computers can do more than one job at once. · With document imaging based on Sun hardware, we save citizens time, and the city money," Judith Rice, Chicago's revenue director, proudly says. + There's more to this story, of course revenue increases of 400 percent, limiting property taxes, -but it looks like our time is up. . And you know what that means. • Sun computers. Just the ticket, it seems, for the City of Chicago. O More than 135,000 organizations are using Sun systems, powered by the SPARC* chip and the Solaris' operating environment, to

> gain a competitive edge. The City of Chicago is just one. To learn how you can benefit, call

1-800-426-5321, ext. 605.



A Sun Microsystems, Inc. Business

The Network Is The Computer

66 We were told it was impossible to develop a client/server application without extensive retraining. Then we talked to Micro Focus.

Monntain Fuel Snpply, a division of Questar, is a utility company supplying natural gas to 750,000 cussomers across Utah. Wyoming, Idaho and Colorado. The company's success is largely driven by its implicit belief that the

Yet, IT also plays its part in that success: client/server architectures and graphical user interfaces (GUIs) have helped Mountain Fuel Supply move applications and information closer to the customers and the employees. All of which has resulted in an augmented level of service being offered to customers.

When larry Lowder, one of Questar's

Systems Architects, set out to hulld the client/server architecture for Mountain Fuel supply, he needed solutions, not skepticism. For the first project, a cashiering system, he needed to link workstations with OS/2* to the D82* database on the host, running CICS^{*}.

"We were faced with having to spend up to two years retraining our COBOL programmers in C and API calls. Then we discovered Micro Focus Dialog System". It allowed us to build the client functionality we required, and re-engineer the existing manuframe application as a server."

"Within a week, mainframe programmers were producing GUI screens for COBOL. Within

90 days we had delivered the system. Now we're not only coming in under budget, but also way ahead of schedule."

As Mountain Fuel Supply discovered, the Micro Focus solution lets you make a productive transition to client/server without sacrificing any of the resources you've worked so hard to build.

When the world's leading corporations demand "A Better Way of Programming," they turn to Micro Focus. For a brochure on putting the Micro Focus Client/Server Solution to work for you. call 800-872-6265.

MICRO FOCUS

David Coursey

Suite



6.0, and I think

But there's a good chance I woo' The issue isn't flie compatibility. We are already slinging a variety of file formats around the LAN and both Windows and Macintosh No matter what I do - upgrade the Winword I'm using today or make the switch — I will still be saving es in some sort of a common deator format until everyone

e catches up. No big deal.

onal preference in this case is lication. WordPerfect and its partner, Borland, won't weigh in with a real integrated suite until ext spring. I think there's a reae possibility they will catch all at once, but we woo't know In the meantime, WordPerfect does include nice spreadshoot and

graphics capabilities, but the qual-ity of an individual application isn't the point anymore. Integration is. For better or worse (and it's likely there'll be a lot of that), soft ware suites are the way we're all

Patchwork buying It used to be our desktops were a

patchwork of our software packages. The best choice from the adsheet column, the best rd processor and a bunch of apps, like communications or phies, that few outside our imte workgroup would care ut. How well these application uch once we got over the major rdle of file sharing. Today, the "best of breed" ap-

roach has been replaced with a ow concept: What you do isn't as tant as who you do it with. of software thought. It says that

Intel fixing PCI bugs

Level of openness still questioned by analysts

By Michael Fitzgerald

n intel Corp.'s proposed new Peripheral Component Interconnect (PCI) local-bus standard has surprisingly big question marks next to its name for a bus with sup-

port from more than 200 ven The questions center on the usual inc

try issues: bugs and the efficacy of vendor Intel recently had to acknowledge bug

in the way PCI works with some implemen-tations of Peotium systems. In a box that combines PCI, the Extended Industry Standard Architecture (EISA) bus and writeback cache, a Pentium chip will run soft-ware some 15% slower than it should. Two large vendors, Dell Computer Corp. and Gateway 2000, Inc., said they would delay some systems shipments for a month until the bugs were clearly fixed.

Mimor issues
The issue may be a small one for users, given the slight delay in ship dates and the setual demand for EISA-bus machines, and, for that matter. Pentium avetems them-

those chip nots are in very good shape said Albert Y. C. Yu. Intel's senior vice pre ident and general manager of the micro-processor products group. Ye said intel has "fixed the problem, and is sampling chip nets to our customers, and they've said it

Yu predicted Pentium-and-EISA system

act this will have in the market, IBM PC

PCVPentium combo in its new ValuePoint line [CW, Oct. 18]. PC Co. officials id they have no prob

ms with bugs salysts said, revolves ound the level of open-es Intel will give PCL intel worked to establish a PCI Special Interest Group (SIG), throwing in

three major patents related to PCL Since then, the roup, which has nine mmittee members and nas developed a new 64-bit standard for PCL

"A lot of manufacturers have this sort of ranois that if they buy into PCL the payck reaper will come in later and say 'pay i''' said Bruce Stephen, director of PC

up: " sase Bruce Stephen, director of PC hardware and pricing research at interna-tional Data Corp. in Framingham, Mass. Stephen said "everyone seems to agree that it's a superior technology, but what's the material letters." the real cost to Intel?

The fear for users would be higher costs for Indicate the same would be injusted to be and in cards and giving control of the bus to one vendor. Manufacturer paramola was heightened by Intel's decision last year to chips in a machine that shipped bur

mhipped with Windows boots up.

Members of the PCI SIG include Digits
Equipment Corp., which has built PCI up
port into its Alpha processor, Apple Con
puter, Inc., which is wedded to the Power?

Basic PC PCI PC

The.

"It's a pop-up paient, and that's what
they are doing again," said Kimball Brown,
an analyst at Computer Intelligence/InfoCorp in Santa Clare, Calif.
Intel officials bristled at the idea that the

"We've agreed to license on an open as royalty-free basis [our] intellectual pro-erty. We have documented that, and th documentation and agreement has been is-sued to every registered holder of a PCI

Software may clear some hurdles on data highway

CAMEDIDOR MASS

With more than \$30 billion expected to be spent on the construction of a nati highway, some of the luminar ies of the computer science world gathered here at MIT last week in an effort to high the major research chi

Probably the most press issue is a lack of intelligent a ware capable of taking advan-tage of such an infrastructure. MIT, most researchers curred that while the elem

to build an infrast

ing a fiber-optic network and tinking bomes and business to that network, which will the

lent of a Ro highway, provid-

"Right now, the Internet is the duck tape guing together the infrastructure," said Mi-chael Hawley, an MIT assistant

can find and gather infor-

Mac users waiting for PowerPCs

ome longtime fans of Apple Computer, ic. are putting off buying new Macininc. are potting on ouying new Marin-tosh PCs and are southreling away their money while waiting for machines based on the impending PowerPC RISC chip. But most said they will spend those stockwhile funds—said II. kpiled funds only if the new mod e in at the right price.

come mat the right price.
"If they cost anything over \$2,500,
they're just whistling Dixie," said Mike
Balley, a systems integrator
at Lockheed Missiles and
Space Co. in Sunnyvale, Cal-Bailey said his company deads to use the PowerPC

"But if they come in too icey, then I'll have to reraluste. Heck, I could buy [Intel Corp.] Pentium."

neveral models based on the Pow-PC 601 chip, which is a collaborative efert among Apple, IBM and Motorola, Inc. everal models employing the new chip re expected to ship by March.

rethinking autumn purchasing ans, they have also generated a nailbiting meertainty. Some interviewed re-cently wondered whether the PowerPC will render their current Macintoshes oblete. Others were confused about the upgrade path to the PowerPC.

Upgrades on the way Apple spokeswoman Betty Taylor said the firm intends to provide PowerPC ap-

grades for the 68040-based Macintosbes, Centris 610, 650 and 660AV; osh flyx and flyi; Performa 600; and Quadra 800 d 840AV systems.

inst week that it would offer a PowerPC upgrade for all three models of its Work-

if you have Quadrus of the 700, 900 or 950 variety you are also in luck: DayStar Digital has said it will make apgrade cards for these Macin-toshes. Taylor said Apple is working with er third-party developers to create grade paths for other models as well. That news has altered some buying us. "We're only buying the upgradble Macintoshes," said Brian Comnes,

manager of the information center at Dtl. Airways, Inc. in Redwood City, Calif. "We're oot going to shortchange the folks who need new machines now, but we've got to make plans for the future."

Upgrade prices will vary by model, bat they are expected to start at less than \$1,000. Prices will be finalized by the time. PowerPC Macintosh products are an-nounced in January, Taylor said.

For those who do not need the power of the new RISC chip, fear not. Apple will continue to offer 680X0-based systems well after the initial introduction of Macintoch or. PowerPC, Taylor said. In addition, software that runs on today's Macintoshes will also run on the PowerPC achines. "Apple's chief goal is to retain a high degree of compatibility with existing Macintosh applications," she said.

while. Apple is also optimizing arts of System 7 to achieve better performance on the PowerPC processors For example, many Macintosh applications spend most of their time calling pro-cedures from the Macintosh Toolbox, a set of system software modules designed le common tasks. Apple has mod ified the Toolbox procedures that take the most computation power (such as QuickDraw routines for on-screen graphics) to take advantage of RISC



Coursey

CONTINUED FROM PAGE 45

ore than what software you are

Suites are what's hap and we can't avoid them. This is good for cross-ap-

Suites

encourage

people to buy

applications

they don't

need. This

raises

costs.

on integraa and seems to be good for pricing but it bas a ark side as well. ge people to buy ei bea boon l'aot

nywide. This raistraining, support and upgrade led down the

re and more proprietary. A etion that has been made real use clicks in another. Or if there comparable shortcut in two ing implemented in diff

his or her day in Lotus SmartSuite

could have some real problems moving to a Microsoft or WordPeret/Boriand package. Right now, many comp sing the packages and then e desktops -- a sproadet bere, a word proces

e. The software publishers are, predictably agenat at this, ing the license agreements pro-

hibit splitting up the packages. If they get really serious about locking enstorners in there's an easy way for them to do it. All they need to

do is create high end integrated packages in which the applications ample, Microsoft Corp.'s latest software offerior includes a are inseparable, jast as they already do with their \$99 "works" pack-APRIS.

eos — and I think it's If that happ likely -- we may soon come to think of suites as single, tightly integrated "hyperapplications" in-stend of collections of stand-alone es. I'm not sure that will be in anyone's best interest.

Coursey is relitor of "P.C. Letter," a San Mates, Calif., industry newsletter. His MCI Mail address in 558-4460.

Data highway hurdles

back to network resources

the use of intelligent syste

mentations of agreets. For ex-

number of agents that noto-

mate tasks, and a small oum-

her of agents, called Know-

bots, are available for

searching for text across the

Independent agents
The long-term goal, however,

will be to make these agents

grammed rules. Instead, us-

less dependent on pre

be canable of learning by ex-CONTINUED FROM PAGE 45 For example. are looking to incorporate might loarn by monitoring some of the principles associ-ated with biological systems

your interaction with a syste in their systems. Once these that information regarding concocted, researchers o of the New will have to focus on linking York Giants football team is personal devices - Apple important to you every Sun-Computer, Inc.'s Newtoo could

ny night. It will theo be considered a forerunner --"We need to evolve ways of ecan all availsearching and filtering information. This will give rise to able resources There is oo other way to deal data for your with the infrastructure," Hawto your logging Already, users are seeing into the sys the first rudimeetary imple on a Sunday

> accomplish this, pro-mers will have to eventually give op their traditi ally give op their transional programming and debugging methodologies in favor of treating a machine like a child that is capable of learning by example, argued Marvin Minsky founder of the artificial in

iligence inborntory at MIT. The major stumbling block in this area, however, is that in trying to replicate how hurelated data and to represent that data by multiple symbols noted Kenneth Haase, an MFI stant professor of media

overed that it would probably take decades to build systems

vendors are investigating b rowing concepts from the the ories of evolution and nature clent sorting engines, tist at Thinking Mach Corp. in Cambridge, Mass

Hillis said since current en-neering methods are not ractical for making a truly tienting bow the human mind sorts images and data in the hopes of applying that knowl-



Paul Gillin

Portable pleasures



for a complete flight from San Francisco to New York. Unfortuately, no computer I've used has yet med

that challenge, but a couple of recest en-trants take protty good shots.

The IBM ThinkPad 350C color noto-book is where the IBM PC Co. wants to steer the legions of users who can't get the elegant 750C, which has been ed by supply problems. Sporting a chin, passive-matrix color displa 496SL chip, passive-matrix color disp a 125M-byte hard disk and 4M bytes of emory in a 5.2-pound package ut the size of a high sobe the \$1,999 350C is hard to beat. It should

be on the short list of anyone who wan color portable computing on a budget. The 350C's display to crisp and sur-

prisingly responsive for a passive matrix model. I didn't encounter a unter say g condition that made it difficult to read. The keyboard is a bit cramped but workable. The best feature of the ma-chine—and all IBM ThinkPads—is the TrackFoint II, an ingenious little monse control that works by finger pressure It takes a little getting used to, but once you get the hang of it, the TrackPoint is ost convenient, best designed ouse controller on the mari

The ThinkPad has a few other nice for ures. A software power management configuration utility is accessible with a bination at any time from eithin any program. The feature lets you omise power-management tures to get the mix of battery life and eformance you desire. A 3%-in. distte drive is conveniently built into the

IBM claims that the ThinkPad 350C gets up to 9.3 hours of battery life "dending on usage," which probably means sitting quietly on a shelf. Battery life is a disappointing 2 to 2% hours at st. What's worse is when the Think-Pad's battery gets low, the unit beeps an es every few seconds. It can do this for an hour or more, making for great re ions with your airline seatmates. IBM ould make the Think Pad's low-battery der less aggressive in the future.

New for something else . . . Damphin Technology presents an en-tirely different bid for the traveler's wallet with its DTR-1, an intriguing little handheid device that explores new di-mensions in ministurization. Lombard El.-based Dauphin is aiming the DTR-1 at business users who want an elegant. pact, touch-typable portable com-

puter and who occasionally need to so Priced at \$2,485, the DTR-1 has many novative design features, including an internal fax/modem and optional interfor use as a pen computer or an ultrace et portable. The unit is in two pieces:

nal Ethernet. The DTR-1 comes equipped a pen-ready 9- by 5%- by 1%-in. deep se unit with built-in VGA display and

separate keyboard

You can run DOS, Win soft's Windows for Pen Computing, using nputer or a largish handheld syste The system unit and keyboard are strapped into a leather billfold that zips shut like a traveling tollet kit.

The best part of the DTR-1 is its brilant little screen. The backlit LCDta



bright enough to read in any lighting sit uation. Battery life is an unspectacular things at once, the DTR-1 succeeds in do ing neither particularly well. Windows

for Pen Computing is a poor choice of op

Windows doesn't translate well to a pen interface and in part because its primi-

tive handwriting recognition renders it

almost useless for serious notetaking. Also, The DTR-1 is just big enough to be inconvenient as a handheld system. A

to the quality of most notebook alterna-

(at no charge) the software to belp then

understand, explain and sell the prod-

uct. The software allows the broker to fill

is data for prospective clients and then

show customized graphs that illustrate how the investment might look in their

By the end of 1993, Cal-

vert expects to have hand ed out 5,000 copies of the

Prism Edge software to in-

dependent financial advis-

sales tool, he said the soft-

ware ensures that brokers

in addition to being a

ers. Chambers said.

serious pen user would want som

crating environment, in part because

two to three hours

tives and the key spacing was a bit cramped for my long fingers. The leath-case has an elegant but filmsy feel and the lack of a hard shell case may be dis-

ieting to the traveler who is used to hesping abuse on a portable system. The DTR-1 comes with a skimpy 20M-byte hard drive. These days, that's barely ow to bold Windows and one or two leations. Serious users will quickly run out of spa The DTR-1 is in

many ways a break through in portabilit dowing among over ere. But as a general purpose notebook, it's a couple of meg

If you're in the market for fax software, run, don't walk, to bus Pax Works Pro 3.6 from Atlanta-based Soffiet, Inc. This is.

re should be. It not only supports just about any fax modem un r the sun, but its interface is slick, intuitive and fast. In two months of using FaxWorks, I have yet to crack the cover on the manual. Among its many nice feet tures are automatic cover page generation. PaxWorks Pro's image manipula-tion and page rotation is the fastest I've seen. If you're a Detrina Technology Win Fax Pro user, it will blow you away Sofriet has taken the pain out of using a fax modem. This is certainly a great

smaller or flatter. The keyboard isn't up Gillia is Computers corld's executive editor. His MCIMail address is 573-4129.

Firm pioneers software for annuities

Mutual fund company deploys user-developed tool to explain investments investment brokers and then hands out

By Mitch Betts WASSINGTON

me of today's financial investment vehicles are so complex that even brokers cannot grasp all of their features, let alone explain them to most of us. That is certainly the case with "vari-

able annuities," so one leading financial firm is deploying laptop PC software that uses presentation graphics to explain and sell customers on its version of a The first-of-its-kind software was do ped by Calvert Group, a mutual fund

agreement company based in the ainston suburb of Bethesda, Md. In fact, the notion of using computer soft ware to explain an investment product is so new that Calvert had to get approval from the National Association of Securi-tics Dealers (NASD) in Washington. NASD had to review the text and illus

trations to ensure that they provide the

print" as a paper prospectus so the soft-ware doesn't bamboosie customers "They wanted a lot of proof that we caldated the illustrations correctly," said

William R. Chambers, director of business and product development at Calvert, a subsidiary of Acucia Mutual Life ance Co. in Washing-

They had never reviewed a software product re," Chambers said, so instead of the usual 10day review period, it took Variable annuities are a

hot investment product for baby boomers facing middie age and higher income taxes. They ine the investment potential of mutual funds with the tax-deferral attrib utes of insurance, but the features and options are very hard to explain.

So Calvert holds training seminars on the Calvert Prism Variable Annuity for

in the field provide accu rate and consistent information about the investment product

The software has modules for client me arement, competing products, calculations and printing out forms and con

tracts. Programming was done by May-tech, Inc., a small software development firm in Lenexa, Kan.

The laptop software may give Calvert a competitive edge for a while, but Chassbers said be expects other firms will soon use the same technique for educat ole about complex financial prod

Consumer reaction has been favor-able. Chambers said, because the soft-ware presentation uses a customer's setual financial data for making retirement decisions rather than a generic illustration of some "average" person's fi-

"Presentations with flip charts and tree-ring binders err on the side of sim-licity," said Date E. Cooper, director of retail marketing at Capital Holding Corp. in Louisville, Ky., which handles the insurance side of the Calvert product.

The software will be updated every six conths in order to reflect any changes that might occur in tax law, stock perfor mance and the features of comA Tewlett-Packard and Informix help the Midwest Securities Trus (configure handle customer impairies to a realth of the time. And as at wentieth of the cost

> "I don't think I could have done it with any other vendor than HP."

 Donald S Eller, ClO for the Midwest Securities Trust Company, a subsidiary of The Chicago Stock Exchange

Their customers were having to wait over two weeks for critical information about trades and divident Trying to fix the problem with a new mainframe application would have taken about a year, a lot of programmers and a ton of money.

Instead the Midwest Securities Trust Company turned to HP's UNIX-based client/server technology, the ¹I platform for Informix's relational database management software.

"We were able to complete the system within three months, using one developer, Donald S. Blos said. The provides responses nearly ten times faster than the mainframe. They're online, real-time rather than paper-based. And the ITP 9000 system only cost us a fraction of what we spent on our last mainframe upgrade.

To help your company make the technology exchange, call 1-800-637-7740, Ext. 7874 for more information. The ROI alone could be much greater than you think.

INFORMIX*

PACKARD

Can pen be mightier than the mouse?

By Michael Fitzgerald

A small pen-based vendor may have come up with a way to make the pen sup-

Communication Intelligence Corp. (CIC) last week released Handwriter for Windows, which bundles its handwriting

recognition software with CalComp Corp.'s digitizer and Microsoft Corp.'s Pen Extensions for Windows. It will cost \$199 during its first 60 days and \$399

> CIC said the handwriting recognition my prove less important than the sbility use the pen like a mouse, which could

company included several pen-ories nes, such as a crossword puzzle, with Handwriter for Windows, It also incit nature Sentinel, a security utility tied to the user's signature.

"Solitaire taught people about the ouse. People need to get used to the e the company an entree into the mas-pen, and these games should help them

tor of business develop Duva also pointed out that mice can b

difficult to use ou portables, so the product may gain some momentum there. "You've got an increasing number of ple interested in Windows in a portable environment, and the mouse itself is difficult to implement on portables," agreed Ray Boggs, an analyst at BIS Stra-tegic Decisions in Norwell, Mass. "This ild turn out to be an important idea."

Intel fixing PCI

CONTINUED FROM PAGE 45

on, which makes the PCI chip sets. But Smith did acknowledge that the PCI SIG has been les es fewithful in pro-

ion that occurred when Dell, a Vid-etronics Standards Association ed that it held a patent rela alysta said Intel's ability to has tent issues within the PCI SIG is

y to the openness of PCI.

The danger here is PCI-II," Brown id. "The world was not worried about M's Micro Channel Architecture], is us werried about giving control of the ss to IBM. I don't know why people are lling to trust Intel.

smith countered, "We've been the only es who've gone public with what we're lling to do, and we said we're willing to

to it on an es and royhat's what we rould like to

og (PCI) as an en standard then if we take it prory, and we've been consistent in that." tajosh Vashist, marketing manager at

ptec, Inc. in Milphas, Calif., and an inal member of the PCI SIG, down-ed fears that the group may never e the standard. Intel has been very forward and op

we think the progress we've made is ellent, given the size of the group," he



AT 9 A.M. HE DIDN'T KNOW HOW ir it was use too difficult to get a handle on

When Don Glor came to work on the morning of September 19º hed never used a database before Two hours later had developed his first application — It looks like a fire truck

THE THE

Em. 2 m

Fili

actually its a outtomized inventory and hillow management system. for the South County Fire Depart ment San Mateo County CA

Don was using Lotus* Approach™-the only distribuse designed for fire fighters. And

lawyers and doctors and business people. And anyone who snil necessarily a computer Expert

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is expressly designed to be easy. There's no programming to learn. No endless documentation to study And according to independent ---

That's not surprising considering the 543 page supplemental language reference for programmers Don would've had to pore through Which looks like

light reading next to Paradoxs 1300 pages of programming instruction.

The difference is that their recolutes were not designed for general busi

proach lets you get to work right away in familiar easy to understand desk items. You can generate reports, forms or form letters — you can even print making labels to match any specification. With Approach you have database power than

real results with their database in 2 hours."

This will surprise anyone who has tried to work with databases like Paradox* or Access* According to Don, Toried Access and shelve

really is accessible, and you work in one of four familiar, designop mems - reports, forms, mailing labels or form letters - that look and work see like you expect them to to help you be active right out of the box.

Desktop Computing

Bearns Consulting Group, Inc. has in-troduced Version 2.0 of the Bearns Utili-

ties, a software package.

The product is a collection of 23 productivity-enhancing utilities for Microsoft Corp.'s Excel.

The Bearne Utilities 2.0 features extensive printing options, improved file

seat and file grouping capa es, customized start-up screens and tool burs and an assortment of text en-Sylmar Calif. com

This release offers impr of the Bearns AutoSave, Setup, Print ecial and Zoom utilities Windows 3.1. Excel 4.0 and an 80286 or

disk space is required.

higher IBM-compatible with a minimum 2M bytes of RAM and 1M byte of free hard

атна Сопа dting Group (818) 362-9235

-Mega Technologies, Inc. has intro ned Version 2.0 of Bounds-Checker for ws, a development tool. The product has an event logging and viewing capability that offers aut

ection and shows the user the cats that led to the prob to the Nashua, N.H., company,

Bounds-Checker's event log wis saves the most recent events in memory, which allows users to view application gramming interface calls, hooks dow and dialog box messages and

Version 2.0 requires Windows 3.1 (run-ning in embanced mode) and a 386/486 or Intel Corp. Pentium-based PC with a inimum of 4M bytes of memory. ds-Checker 2.0 for Windo

costs \$2.49 ► Nu-Mega Technolog

Andyne Computing Ltd. has introdu Andyne Pablo, a multidimensional d access and reporting tool.

Andyne Pablo provides an a

ctive on information by en users to extract multidimens.

Pablo employs a HyperCube to ogy. According to the Kingston, Oc company, HyperCube is a means of ing and combining mul summary informatio

manipulate and change summary infor-mation stored in HyperCube into re-

A single copy of Pablo for the Macin-tosh costs \$666. A Windows version is scheduled for release in 1994. Andyne Computing (613) 548-4350

Simpact Associates, Inc. has an-nounced Version 1.3 of Remark, voice in-

According to the San Diego company, the product allows networked PC users ation in Wi one and mobile users to use a telephone as a virtual workst

This release lets users link voice in mation to an electro ing the voice on the Remark server is stead of embedding it into documents.

rsion 1.3 also features system ad Inc.'s SPX/IPX protocol. Users have th option to stream cess by reducing the steps involve a simplified recording feature.

Simpact Associ





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Workgroup Computing

RETAILERS BANK OR CLIENT/SERVER, 57 LOW-END SERVERS, 62

Windows users begin journey to Chicago

By Ed Scannell

Microsoft Corp. will begin moving its huge base of Winds 3.t users to Chicago, its next-generation operating system, when it delivers Windows for Workgroups Version 3.t t early

The new version sports a 32-bit file system — largely bor-owed from Chicago — along with several 32-bit networking components, including a new redirector and IPX protocols.

With the help of the 32-bit file system, the product is said to be 100% faster than the original version in

This transition is perhaps welltimed, coming shortly before No-vell, inc. is expected to formally introduce Novell DOS 7.0. That educt will have preemptive multitasking, high levels of securi-



cus groups over the last few months told us that [po w what they are doing. But they often run into prob with inexperienced users who wander into directories they shouldn't," said Rogers Wood, lead product marketing man-

Think big picture for client/server By Elisabeth Horwitt

Corporate users at two co

ences recently took aim at one of the biggest barriers to successful

formation systems managers to cope with the mishmash of proto-cols, formats, tools and architec-

Coetwork installations. Key participants at both confer-nces made the point that IS man-gurs who assume they can work floctively in a client/server suvi-oument with their old, special-sed, mainframe-based database

ost certainly going to take a major fall.

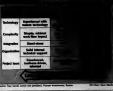
A big reason corporate client server implementations get into

server implementations get into trouble is that the implementors typically go at the project like the proverbial blind men and the eleand one knowing databases, said Paul Hamel, a senior vice presi-dent at Putnam investments in

"Client/server reality is an inte-ated whole," Hamel said. Each veloper needs to be "not an ex-The problem, as identified las

those particular platforms," so-cording to Wade Brown, executive vice president and chief informa-

al insurance Co. Given that such s



GM hops on new document highway

By Michael Vizard BANFRANCISCO

Typical of corporate America's drive to a yuscus or corporate America's drive to get a handle on its mountains of paper, demeral Motors Corp. is employing a ro-bust set of document management tools in a bid to gain more control over infor-

will be an electronic delivery system from Electronic Book Technologies, Inc. (EBT) in Providence, R.I. The system will be used to distribute 3,500 documents, ranging from five to 150 pages each, to its ongineers. GM and EBT revealed de-tails of the project at the Seybold Confer-ence Exposition '95 here last week.

ice Exposition '85 here last week. Initially, GM will use EBT's DynaText delivery system to distribute documents that comply with the Standardized Gen-eralized Markup Language (SGML) to about 1,000 engineers, with a target goal of supporting 30,000 engineers during

reporations with large amounts of on-ne information that cannot be easily ac-

ture isn't in place yet," as

adliez a GM systems dev ger in the System Engla

dors are readying done ment system strategies [C

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But what if the data is not relational? Or you need to combine data from many surces? Or moving large volumes of data s your overtaxed network is unacceptble? That's where the SAS System provides

? That's where the SAS system provides consistence direct heaves contribute contributes and contributes contributed and contributes and contributes of alternative contributes on alternative contributes on alternative contributes on a general and manifellow resource on your desirition. Etc. beyond that have been contributed as more data to the parts of all to the contributes and the contribute contributes and the contribute contributes and the contribute contributes and the contribu

Client/server

CONTINUED FROM PAGE 53

which would be applicable whether the system is from Novell, Inc., Banyan Systems, Inc. or Microsoft Corp. The need for effective training, every-

one agreed, is dire. Formal training costs about \$1,350 per client/server application per employee, according to "Changing IS organiza-tions: The effect of client/server implementation on job skills requirements," a report commissioned by OURS from Gartner Group, inc. and presented at the recent meeting of the vendor/user orga-nization in Boston. On the other hand, "an untrained user will spend between \$3,000 and \$5,000 to get to the same or lower skill level, a 300% hidden premium "the report said.

New skills set Participants at the Technology Transfer Institute's Client/Server Applications and Systems Solutions Conference in New York last week also focused on the difficulties IS managers run up against when they try to apply mainframe-based skills in a client/server environment.

Hamel, for example, related how a client/server project he headed in a former job initially was a disaster, primarily because the team of IS managers tried to build a system from scratch with immature, complex and largely unfamili cts (see story above).

At The Chase Manhattan Bank NA, "We took a position early on that training has to be considered part of the project. built into cost timescale and expecta-tions," said Elaine Bond, a fellow at the bank and president of OURS. One key aspect of that training is to

ak down IS managers' ma ditioning." For example, "most ninframe folks think they can do every thing on the mainframe that you can do

thing on the maintraine that you can to on client/server," Bond said. At Chase, however, as elsewhere, IS is still "sorting out what's generic" to depers' jobs and what is specific, she said. "If my job requires me to under-stand the difference between LAN and mainframe operating systems, don't train me" on Novell's NetWare.

Mythical savings Another part of the job is puncturing myths about what client/server tools will do for productivity and costs. For exam ple, corporate programmers naturally nasume that graphics-based elient appli-cation development tools, such as Micro-soft's Visual Basic, will mean a huge increase in programmer productivity, on an order of 10 to 1, said Shaku Aire, proses. Inc.

'We see a 2-to-1 increase because, while you maybe have fewer program-mers, you need more testers," she said. The reason: loon-driven programs provide far more chances for neers to go astray than do the older, menu-dri-

ystems.

Having made a first cut at training Having made a first cut at training needs assessment by commissioning the Gartner Group report, the OURS tank forceplans next to hammer out a "matrix that details the level of specificity of client/server needs." It also plans research case studies of companies that have successfuly implemented client server solutions in terms of how they ad-dressed the skills issue.

Eventually, the task force plans to work with vendors and educators on how best to deliver generic skills to IS man-

Retailers take client/server initiatives to home offices

Some struggle with bottlenecks, others find savings

By Ellis Booker

Having proved the value of client/server in their stores during the past two years, many retailers now want to do the same for corporate applications in the home

The problem is that few companies have made this migration successfully. "I've had experience with four retail-

ers now that have tried to do it. Every one of them has failed," said Eric L. Deuna at Bricham Young University's J. Willard & Alice S. Marriott School of Management

in Provo, Utab-Retail is detail," said Denna, who attributed the bottleneck to I/O speeds of server-based systems. "When yon're talking about Sears logging 50 million to 60 million event records every day, there isn't a client/server [system]

today that can bandle one-tenth of that Denna added that client/server is a very appropriate arrangement for use in stores because the amount of data that even the largest individual store collects

Denna was one of the speakers at the RisCon '95 Expo earlier this month in Chicago, where client/server computing. wireless networking and ways of capturing and mining customer data were top ssues. This year's three-day show atcted a record 5,400 attendees and

Making it work

Nevertheless, success stories are out there. The cases of Texas State Optical ont, Texas, and Galyan's in Plainfield, Ind., are typical.

Texas State Optical, an \$18 million manufacturer and retailer of prescription glasses, migrated off a proprietary NCR Corp. mainframe two years ago. It has since put all its business functions on a LAN-based system running the Paradox relational database from Borland

According to Mike Sales, chief final cial officer at Texas State, who attended RisCon with MIS director Kraig Black, the company has been able to slash its administrative and informations ave-

ms support staff thanks to the new sys-At Galyan's, a \$50 million sporting goods company, an IBM RS/6000 server now supports about 100 users. It re-

placed a Data General Corp. platform 18 "We're using commercial software augmented with an Informix database," said MIS director Michael Anderson.

One of the first The Bombay Co. in Fort Worth, Tex was an even earlier downsizer, although it chose an IBM AS/400 rather than a Unix platform when it began its move in

"The business is growing 30% to 40% per year, and while Unix would have givon us the scalability we wanted, the soft-ware wasn't mature," said Christopher W. Battine, director of IS.

The Bombay Co. took its administra-tive and financial systems off a Wang Laboratories, Inc. host in 1991 and its merchandising and inventory systems off an IBM System/38 last summer. Now-adays, two IBM AS/400s run the business in the corporate office and connect to 486-class point-of-sale (POS) ter

in the company's 400 retail locations.

Meanwhile, the rest of the retail ind try is clearly walking the path forged by Kmart Corp. and others a few years ago satting client/server-based networks in stores. A typical configuration sports PC-compatible POS devices at checkout eted over a LAN to one or more high-end processors. These instore processors, in turn, communicate with corporate bosts over dedicated

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Let's see how Notes helped one team quidily resolve a problem caused by a last-minute client request. It involves the construction of a building in Neully, Prance designed by an architect in the San Francisco office of a company headquartered in New Whoth Notes this kind of responsive problem solving doesn't Yappen.

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It's the show that had to happen. NetWorld+Interop 94 was and specifically to mirror the changes in networking itself-the convergence of LAN, WAN

ing? How do you make buying decisions that stand the test of time? Seeing all your alternatives working in one place at one time is the only real way to find out.

Imagine, more than 600 of the world's leading networking and comput-ing suppliers all under one roof. Demon-strating the latest technologies. Letting you test drive products and see them work together on the InteropNet, a live multivendor, multi-protocol network that con-

What's more, industry gurus

will tell you about what's here now and what to expect. And university-level conferences and tutorials provide a chance to learn and exchange ideas with the industry's best and brightest. And now, for the first time

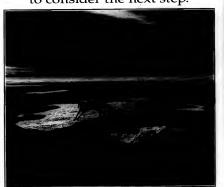
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the Internet at networld @interop.com Better than NetWorld. Better than Interop. It's one event you can't afford to mis

Before you make a move in this rapidly changing environment, take a minute to consider the next step.



Does your software h evolving world? Or will it ave the ability to adapt in an fall prey to the changing times?

In a world where technology seems to change by the minute, finding flexible business software with the necessary features to survive can be a difficult task. It may be fine for your present demands, but what happens as technology and the needs of your company evolve? At J.D. Edwards," we create business software that withstands the test of time. We're writing our software to be platform independent, so it can adapt to a variety of machines. And because we're using advanced GUIs, our software will be easy to extend as your business grows and evolves.

Is your softw new territory?

are company leading you into Or just migrating with the herd?

These days the talk is all about the migration to open systems. But how can you be certain you're getting the right technology and not just following the crowd? While other companies are rushing to jump on the UNIX* bandwagon, J.D. Edwards is taking the time to explore other open systems technologies as well, such as Windows NT," Cairo and Taligent. What's more, we offer strong vertical applications for a variety of industries, so right out of the box

your software will be closely tailored to your specific needs.

In an enviro success co



nment where the sky is the limit, mes from knowing when to act.

at such a rapid pace, it's hard to tell exactly when to jump in and grab onto something. J.D. Edwards gives you the confidence to act now without worrying about locking yourself into one technology. By participating in our maintenance programs, your software investment will be preserved even as you migrate to another platform. Whether you're looking for the best software for your AS/400° system or are considering taking the plunge into open systems, we can get you where you want to go. Even as your needs change, we'll be there to deliver the kind of service and performance you demand in a software partner.

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MULTINATIONAL BUSINESS SOFTWARE

Workgroup Computing

Windows users

CONTINUED FROM PAGE 53

NetWare's Open Document Interface drivers and can run peer-to-peer services over a new 32-bit IPX protocol. Some users think this support makes Windows for Workgroups a more appeal-

ing client in heterogeneous networks The enhanced support for NetWare akes it an ideal client for PCs operating in heterogeneous networks," said Paul Fjeldsted, an engineer at Hewlett-Pack-ard Co.'s scientific intruments division.

Microsoft has also added support for its recently released Windows NT operating system. With the new 32-bit networking and disk-access features, company officials will position Version 3.11 as a more ideal client to Windows NT for client/server or mission-criticial appli-

The latest version has also added sup port for remote users who can now access all of the program's features from the road. Now a complete superset of Windows 3.1, Version 3.11 is reportedly

50% faster than the original. Fast around the track

Much of the product's added speed has to do with its 32-bit file system, which is borrowed largely from Chicago, the 32hit version of Windows due in the second half of 1994 "What we have is a 32-bit version of the

[file allocation table]," Weed said. "It speeds up I/O requests from Windows both to local drives and to ones over the network."

The first manifestation of Microsoft's At Work operating system appears in Version 3.11: the ability to send and receive messages and fax files that can be edited from one Windows for Workronps machine to another

This means I can have a peer-to-peer etwork and put a fax/modem in one PC and share it with all other PCs on the network," said Tom Gibson, PC coordinator at Weyerhaeuser Co. in Portland, Ore. "Anyone can send a mail message with a ax to anyone on the network."

Unflattering label
Trying to refute the "Windows for Ware-houses" tag that some have placed on the product because of sluggish sales, comany officials announced earlier this onth that they have sold more than ! million copies of the product. However, several analysts have noted that the

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number of copies in use is likely lower.
If Microsoft can win the hearts of users

with added speed and features, it may also try to buy their hearts. The company has priced the upgrade of the product at \$50 for registered users of Windows 3.1. The full package, aimed primarily at DOS users wanting to add Windows as

tworking support, will cost \$219.95 for the first 90 days of availability.

After that, the price will rise to \$249.95. It should be widely available through re-

sellers early next month.

The Workgroup Add-On For Windows is targeted at Windows 3.1 or Windows for Workgroups 3.1 users who want to

red at \$69.95 for the first 90 days Trying to hook DOS-b oft also unveiled The Workgroup Add-On for DOS, which features DOS er service capabilities. This product vantage of older hardware sys print or file servers. Expected to be available a few weeks after Windows for Workgroups 5.11, Add-On for DOS car-

es a retail price of \$49.95 Minimum software and hardware re quirements for the product include DOS 3.5 or higher, a \$868X-based system with 3M bytes of RAM (although the company recommends 4M bytes) and 7M bytes of hard disk space (although the comp

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Low-end server descends from rugged line or ruit a necounting and comput-

as Microsystems, Inc. last week jumped into the low-end server race, un-veiling the first of a family of fault-tolerant servers aimed at workgroups of up

The company also spun off a new busi-

ness unit, called the Fault Tolerant Sysme Division, to manufacture and mar-

The Fault-Tolerant Systems Architec-ire (FTSA) server offers dual, hot-swapble power supplies and mirrored disk ives. Hot-swappable disk drives are ries D. Hultgren, general manager of

The FTSA includes a diagnostic coprocessor card that monitors system ents and notifies administrators of component failures. A data auditing and recovery feature allows administr tors to reconstruct lost di

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Computerworld

Alpha-test site Kontek Industries in New Madrid, Mo., has been using the

and mirrored drives were key in mak the decision to go with Texas Micro," said Sheila Marshall, a controller at the engiering firm. "We've had problems in the ast with losing data due to power outages, and we haven't experienced any

dems with [the FTSA]. The PTSA represents Texas Micro's rst push into the commercial server market. It is a scaled-down version of the firm's ruggedized high-end industrial server, which debuted one year ago.

Plags hurdle

"Name recognition represents our biggest hurdle out of the gate." Huitgren
said. "However, we believe our price
point and reliability features are in line
with competitors' products, such as Compaq's ProLiant line."
"Server vendors are scrambling to

bring the reliability qualities of minis and mainframes down to the PC level, said Susan Frankle, an analyst at market search firm International Data Corp. in Framingham, Mass. "This [low-end] segment of the market is very com tive and is just starting to heat up. Texas

Micro is getting in at the right time."

In addition to fault tolerance, the FTSA also inherits the ruggedized features of its industrial forefather, such as extra fans for cooling and a chassis built from heavy-gauge steel, and was designed to orate at temperatures ranging from 0 to 55 degrees Celsius. Pricing for the FTSA begins at \$9,500

for an XT/AT bus-based system that inciudes an intel Corp. 33-MHz 1486 microprocessor, 4M bytes of RAM, 245M bytes of disk storage, keyboard and Super VGA controller. An Extended Industry Standard Architecture version is slated for early next year and will start at \$12,000. The server supports several operating

systems, including Novell, Inc.'s NetWa and IBM's OS/2. Support for Microsoft Corp.'s Windows NT and Intel's Per essor is planned for early next year

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DIGITAL UPDATE

By Dr. Lawrence Wolker, Was President Worldwide Natural's Engineering District Consensation

By now, the news is out.
Digital is changing the way it does business—
not just in small steps, but in leaps and bounds.
The customer is at the heart of our work as we
simplify the process of doing business and

surangehen our core competencies.
Networking is one uses where Digital offers incomparable strength and uncompromising breadth to bridge customers' business applications through clienthierver computing. But typing together computers and people with the network is successful only if networks are easy.

so ireall, use, and manage.

By incorporating this case-of-integration network focus into our unified open network strategy. Digital is committed to delivering heable and modular products with built-in intelligence and management along with integrating multiple network exchnologies, protected, opening systems, and future technologies.

Client/Server Networking: Fundamental to Business Seccess

Clientherver networking is truly at the heart of business success. Businesses are demanding mothing less than nop network performance. With clientherver networking, the companing system that used to trun on a single mothine is now a distributed system — a network spread across multiple computers, technologies, corrunties, and organizational functions.

The network takes on the role of integrating diverse systems, multi-technologies and protocols, and mixed software planforms to interoperate with each other. The resulting challenge? To implement networking solutions that are:

* Scalable from small workgroups to large

corporate offices
* Flexible, to cost-effectively meet users' chang-

ing requirements

Able to integrate applications on disparate

system platforms

* Easy to manage

* Compatible with both existing and future

innovative technologies

Biglish Past 1 All Together For nearly twenty years, Digial has been an undisposed based in accounts, In fact, we have grown one networking capabilises into a most chan 31 billion business through successful installation of more than 13 million serventiva and networking of more chan 15 million systems. In short, we have the enging power, common near, and mrange to diver the beat and comprehensive range of networking products and services for good eluterhere solutions. Digital's open networking strategy provides future directions in network software, hardware, and emerging sechnologies, with focus in critical products areas such as:

* Network Operating Systems (NOS) — PATHWORKS Product Family Offering out-of-the-box system integration and

Offering out-of-the-box system integration and the easiest management of PCs, servers, and multivendor NOS.

" Network Interconnect — The DEChub 900 MultiWritch Offering the lowest-cost adds, moves, and

changes of any hab around.

* Mobile and Wireless — Wevel AN and

DECtransporter Products
Giving users boundless fisedom to access infor-

mation anytime and anyplace.
Network Operating Systems
Users need secure access to data segardless of

Users need secure access to data regardless of the PC platform or operating system. But PC "ideards" naturing popular NOS software present network managers and users with the challenge

of first persons to and then managing data.

Digital's network operating system strategy focuses on integrating a multivendor PC LAN

tine emprie nervorks.
The PNIPSVERS product family, Digital's
CE extructing and integration software,
contains unto whose unpaired among acceptance of the contains ware to wave unpaired among the CPC, deathous server promes, and nervorking promocols into a single open nervorks, though containing and containing the containing and containing the conta

CO OF OR WAY AND OCCUPANT

Network Interconnect Products
Business changes create usending network
changes. Whe 80 percent of all networks needing some kind of reconfiguration every year,
network flexibility is enecial for adapting to
change and minimizing con-

Digital's network interconnect strategy focuses on universal connectivity and multivendor interoperability through the delivery of flexible, reliable, easy-to-manage, high-speed networking systems with built-in intelligence.

networking systems with built-in intelligence.

A key product within this strategy is the DEChub 900 MultiSwath — the most con-effective way to add, move, or make changes to the network.

The DEClads 900 Malifswinch — with more than 3 gighties of Etherret, Islem Ring, and FEXT — provides brashreish on densated. It also offers unsurpassed modularity with modular that map freely into the backpiane or can be used as standalore units. In addition, it has the Rectability to switch prove LNN-to-LNN with graphical software on a FC or workstation.

control or page 2 (*)

PUTTING IMAGINATION TO WORK

Digital's networking strategy focuses on

easy-to-use network integration

products and services to help customers

quickly evolve to open

client/server computing.

Repeater, concentrator, and router modules are designed "hub-ready." The newest addition

to Digital's multiprotocol router family, the DEChrosser 90 bridging router, offers lowcost LAN connections and remote access for Digital and Cisco environments and supports all popular networking protocols and router

Digital and Gisco environments and supports all popular networking protocols and router standards.

Another key benefit of the DEChub 900 MultiSwitch is its bull-in investment protec-

tion. The product has been designed to allow more than 20,000 installed DEChub 90 modules to stop into and be managed in it. Plus, the DEChub 900 MultiSwitch will integrate

funar exchanologies as they arise, such as asynchronous transfer mode (ATM). In addition, we complement our hab offerings with a line of twitches and sources — for campus and enterprise integration — as well as network interface cards (NICs) for deaktop

appliance connectivity. Mobile and Wireless Products

Today, workforce mobility is becoming increasingly critical for business. Completing work away from the office requires simple and secure access for those professionals who demand the

access for those professionals who demand the freedom to easily access the network anywhere, anytime. In answer to those demands, Digital has launched mobile and wineless products into the

markerplace today. With the wireless WaveLAN product, users can use networked PCs — without a physical network connection. With DECtransporter software, users can access networked resources — from wherever they work. For the future, Digital will continue to deliver leadership products to address mobile.

.............

wireless, multimedia, cable TV, and public transport areas.

Putting Innovation to Work

Digital's open networking strategy offers casyto-integrant, easy-to-manage network solutions the logically and physically connect clients to servers. We can help you build workgroups with PATHWORKS products and hubs; tie cogether global information highways with nours, gureasys, and high-speed witches; and give you boundess freedom through mobile

and wireless networking.

Most important is how these technologies affect your bottom line. That's why Digital is committed to working with what you have while paving the way for future innovation, growth, and success.

C S

WITH DIGITAL SOLUTIONS FOR MIGRATION

Migration is one alternative for meeting your changing business needs. And who better than Digital to help you every step of the way.

lobal competition. Shorter product life cycles. An accelerated rate of technology change, Business challenges are all around you - making it harder for your company

to remain competitive in the '90's.

Whether you prefer to call it downstring, upstring, or right ng, companies like yours will be forced to take a long, hard look at their computer resources. As you look for new ways to streamline your business, sustain competitive advantage, and reduce operational costs, visu will need to consider doing things

Take Steps Toward Seccessful Migration

Digital understands that the migration process can be a complex ect if it is not well thought out. Good planning is key, That's why it is critical that your company - large or small follow five basic steps toward successful migration. These

- · Identifying your business goals, needs, and want
- Identifying possible solutions including reboxing, marchitecting, or recognitering
- · Determining the feasibility of each solution from a financial. technical, and operational perspective Choosing the appropriate solution

· Developing a plan to implement your solution of choice Having already helped many companies migrare from non Digital platforms, Digital has demonstrated flexibility in enabling companies like yours to address each of these steps. For example, your company may have some of the resources to carry out the migration. In that case, we will tailor the project to meet your specific needs. This includes formation of a team that may consist of your staff, our migration specialists, and appropriate partners as required to ensure a quality solution delivered on

rime and within budget. We also offer a complete migration solution for those businesses that may need more assistance or prefer to oursource. In doing so, Digital can take care of all the details including converting your applications, training your people, and managing the implementation of the total solution.

Tube Advantage of All We Offser
What exactly do we mean when we say that Digital offers the
complete migration solutions package? Take a look.

Multivender Services

For starters, we offer multivendor services for your existing con ning environment — be it Hewlest-Packard, Sun, IBM, Prime, Warry, Data General, etc. You continue to use your current system until the new solution is safely up and running to your sat-isfaction. These services facilitate periods of coexistence or ongoing multiplatform development — meaning no downtime and no productivity loss for your business.

Migration Tools

Digital offers industry-standard toigration tools such as DECraessageQ and DEC FullSail products to streamline the application conversion process. A broad range of industry-standard tools from our business partners are also available to facilitate various aspects of the migration process. Our migration pursues include:

- Alternative Office Solutions
- Arris Software
- Bosson Software Works
- Computeron Technologies Corporation
- IDS UNICON
- · Unidos, Inc. · VMark Software, Inc.
- aulting Services
- We have an expert staff of consultants experienced in migra from non-Digital to Digital-based solutions. Consulting services inches
- · Application reengineering and migration services for ease in code convenion and migration from your current computing
- environment to the target enviro · Customized training that lets you choose from a range of education options to much the needs of your organization. Courses cover the target system, software, networking, systems management, and more
- · On-see hardware and software maintenance for non-Digital as

well as Dirical restorn

You Choose the Pletferm No metter what platform you choose to migrate to - including Digital's Alpha AXP platform running DEC OSF/1 AXP. Windows NT, or OpenVMS operating systems — we'll help you get chere. In face, we simplify mageration of your applications to the Alpha AXP platform via Digital's Privileged Architecture Library (PALcode).

Essentially, PALcode enables the software to become independent of the hardware architecture — allowing you to run other operating systems on Digital's revolutionary 64-bit Alpha AXF platform. FALcode is like a microcode library on the chip that enables you so transfer the calls of different operating sys-tems and/or applications. Once the call is transfered, it is then executed by the Alpha AXP system.

You are also free to choose the database that's right for your business needs. Digital's migration methodology and tools allow you to migrate to DEC OSF1 AXP or Windows NT operating systems with databases that include INFORMIX, INGRES. ORACLE, M/Open, SYBASE, Unidata, PROGRESS,

We Deliver the Complete Peckage

Whenever you need for successful migration, Digital has the tools, services, partners, and experience to help you make the most appropriate choice for your business. We understand your need to meet the business challenges of the '90s head on. And we're here to help you do it.

For information on Digital Solutions for Migration, call 508-467-2708. Answer a few brief questions about your company to receive a FREE Digital Solutions for Migrati-videntape. a



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NSS Numberical Algorithms Group, Inc.	MACON CO. Co
	Western SD Compiler, MAS Fertran Library, MAS Graphics Library, MAS Ont he Help, MAS Fertran Month Colonian Committee (ME) (MAS Telephone for 18 1995).
Disjective Solutions	Office Designer for OSF/1, CRIM Designer for Windows.
Omtosi	Fox Sr. Forme Package, Fox Sr. FRZHWORKS Package.
FSW. III.	Other bind Unior Essoulation Far St Former Package, Far St PREFINITIONS Package, Far St ALL-84 I Package, Far St Wordfurfact Fackage Fatal Base Program, Tabo, Advanced Solvetics, Data Entry.
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PSA PSA	Date Plus Signal Processing Software Package Eac Plus Backup Hanagement Software
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Tis Transportable Software Internal U.S. Design Unitizer Corporation Universit Corporation Universal Technical Systems	PRACE PRACE Tischer, Roork & Yeung on IK, Heat Transfer on IK,
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Wing Software Services, Inc. VSA Applied Computer Solutions VTI-Virtual Rechnologies Incorporati	Forts VSA-30, 5-Dimensional Informous Analysis

PUTTING IMAGINATION TO WORK

Compuware Corp. has introduced Eco-Scheduler, a member of the EcoSystems family of client/server systems management software.

According to the Farmington Hills, Mich., company, EcoScheduler lets users schedule batch jobs for the enterprise based on celendar events, the status of other jobs and resource use in an open evidence did conter.

The product provides integrated management of networks, operating systems and databases, addressing production support for mission-critical applica-

Peatures include flexible scheduling, complete schedule control and limits on resource consumption. Version 1.0 is scheduled for shipment in January.

scheduled for shipment in January.

Prices for EcoScheduler start at
\$8,000.

► Compuware (313) 737-7300

XLI Corp. has introduced the Image Xpert Network Print Server, a product that creates an integrated, high-performance printing system.

The product manages, stores, processes and transmits image-intensive data. According to the Weburn, Massa, company, the image Xpert Network Print Server consists of an Intel Corp. 149th-based computer, butli-in Ethernet/Local-tik, espablisty, a 245th-byte bard disk, XLFs Image Xpert 1000 plain paper imagesetter. Zenographics SuperPrint and Zenographics SuperPrint super-

Available for Windows and Macintosh neers, the Image Xpert Network Print Server costs \$10,965.

►XLI (817) 939,9199

Computron Technologies Corp. has announced that N-Dimensions financial software and EPPC imaging and workflow systems are now available for informix Corp.'s relational database.

According to the Rutherford, N.J. company, the partnership bleads Informit's client/server database and Computron's advanced Level 3 client/server architecture, allowing individual application functions and processes to run on either the client or the server pieces of a computing environment. Computron applications run on Unix servers such as Newfett-Packard Co.'s

servers such as Hewlett-Fackard Co. 2s HP 9000, IBM's RS/0000 and Digital Equipment Corp.'s Alpha AXP as well as IBM's AS/400, Digital's VAX and HP's 5000 legacy systems. Pricing is based on a module basis

starting at \$30,000 per module.

Computeron Technologies (201) 935-3400

Business Objects, Inc. has announced BusinessObjects for Unix Motif and BusinessObjects for Unix Character, deestigated to provide complete information access, analysis and reporting solutions on an enterprisewide basis.

According to the Cupertino, Calif.,

company, BusinessObjects for Unix Motif supports the Open Software Foundation's Motif user interface and can be deployed in two different configurations: on Motif workstations that are attached to a Unix database server or on Unix-based servers that are running Motif with users soccessing the data through

X11 terminals.

BusinessObjects for Unix Character is a character-mode implementation of BusinessObjects.

The User Module, the end-user version of BusinessObjects, costs \$595; the database administrator version, the Manager Module, costs \$3,495.

(408) 973-9300 Product short

> AFIC Technologies, Inc. has announced the Multi Server Option (MSO), a database replication system designed to de

liver fault tolerance, diseaster recovery, high availability and a broadcasting pistform. The product allows an utilinated number of users to simultaneously occus the consumer of users to simultaneously occus to in any location. IRSO provides zero downtime and reduced response time. The product is available on San Microspitoms, loc. and Herviet-Packard Co. pistforms. Cost: Ranges from \$8,460 is \$8,500.0. APIC Technologies, New York

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IDC Insight

New Cost-to-Use Analysis Key to E

Sponsored by IBM Appli

DC has developed a hetter nethod of evaluation costs of computing. Price/performance hers hased on hardware benchmarks are often extremely or predictors of the actual com-ing costs users will face. This is especially true in situations where tomers are distributing very-comworkloads The IBM AS/400.

across an enterprise. Hardware pricesometimes mistaken performance bencharks such as TPCprovide solid, base-level compar-isons in specialized nvironments. They enterprise-wide process

xity of most users usiness needs and processing workloads. Therefore, they have limited value in making nic buying decision

To help IS ma diet the true cost of computing, In national Data Corporation (IDC) developed a "cost-to-ose" model. This model is intended to more-accurately measure and compare the full costs of using four types of leading enterprise-wide applications. The sys-tems in the study were: IBM AS/400, DEC VAX VMS, HP UX, and Net-Ware LANs.

cial computer installations in the than 30 customers who have installed networked-enterprise systems to assess the full range of computing costs in complex, enterprise-wide environments. The model IDC developed from this research includes hardware, system software, applica-

tion software, development-staff and operations-staff costs, and all overhead costs associated with remote-systems management performed by a central size over a five-year period

IDC believes the results of this study provide IS professionals with the best information available on the costs of rocessing in the most-complex type ting environment, the networked enterprise. While we doubt that the results of the study will come as a major surprise to those who have fully considered the issues, our data contradicts notions based simply on hardware price/performance figures.

Fonr major options appear to he available to PC LAN users.

 Do nothing, and continue to live with existing distributed or decentralized topologies and functional-





ity as they currently exist. 2. Wait for LAN vendors to deliver the needed functionality.

3. Add to operations staff, even though this will increase costs out of proportion to the increase in benefits.

4. Implement currently available technologies that provide the advanced functionality not yet available on LANs. While this ma result in higher up-front costs, the IDC Cost-to-Use model indicates that this is the most-effective

Staffing costs dominate
For example, consider the following: · Integrated systems-management software services (a series of coo

dinated tools for admioistering local and remote systems) are a major differentiator for users because staffing expenditures dominate overall cost in the networked enterprise.

In a distributed topok In a distributed topology, opera-tions-systems staffs for IBM AS/400 and DEC VAX systems cost \$36 per workstation per m roughly a tenth of the cost of LAN-based system. In a decentral ly a tenth of the cost of a ized topology, as opposed to dis-tributed, the reverse is true -LANs had the lowest costs for operations staff at \$244 per work station per month. However, IDC

believes these staffing costs are likely to rise during the next two years as the LAN-hased applicaons mature and require rework-• Users — even IT professionals —

generally lack experience with net worked enterprise topologies. The logistics of distributing new software, software updates, physical and electronic support services, and hardware in a networked enterprise are viewed as a major barrier to success. As a result, few users are taking full advantage of the possi-ble benefits of complex, distributed processing.

The application set on LANs tends to be less-sophisticated than those on minicomputers. Development resources available for mioicom-

valuating Networked Enterprises

cation Business Systems

puters often are considerably more sophisticated that those available for LANs. In response to rapid changes in business environ we believe that many LAN-based applications in networked enterprises will require significant frame as the environments move from support roles (i.e. file, pr and electronic mail servers) to fullfledged production applications (OLTP, database, accounting, and data analysis) computers.

• The IBM AS/400, sometimes mis taken as a premium-priced product, emerges as the lowest cost-to-use system in complex, networked, enterprise-wide processing

The IT industry is currently investing heavily in distributed computing — and rightly so. Distributing processing power while retaining overall cohesiveness is an outstanding strategy for achieving the most-pressing objectives facing IT professionals today: organizational effectiveness, hetter return on IT investments, increased productivity, and morerapid exploitation of new technoloHowever, distributed processing is associated with significant complexity and uncertainty. Making the right decision requires higher quality, more-relevant information.

Conclusions
The information technology market is a very-complex place to shop. An expanding variety of hardware, software, and communications technolo gies, most associated with individual functional capabilities — that offer unique benefits - is being marketed by IT vendors to prospective and current customers. IT professionals demand better sources, quality and types of information to help them make the right decisions when planning purchases in this market.

Popular benchmark metrics such as TPC-A are specialized indicators of application performance (e.g. OLTP). As systems topologies get more complex, the appropriateness of this benchmark decreases dramating TPC-D and TPC-E benchmarks will provide significant advances.
Users are exploring more-complex topologies as they attempt to support more-complex husiness strategies.



The distributed enterprise and the decentralized enterprise, although more complex relative to traditional host-based, fully centralized configurations, are especially attractive to many companies. Comprehending options in these more complex setting, however, requires special costing

IDC applied its Cost-to-Use model to help users better understand trade offs between alternatives. From our research, the following conclusions

· Overall costs-to-use in networked enterprise are very dependent on staffing levels. Superior systems-software services allows users to minimize staffing levels at remote sites without also minimizing IT

support and responsiveness.

• IBM's AS/400 and Digital's VAX

VMS systems, largely because of their advanced system-software capabilities, are more attractive cated, networked OLTP enter-prises. Moreover, our research indicates that IBM's AS/400's cost to use is superior even to Digital's VAX VMS offerings.

• The Hewlett Packard 9000 offers ne rewitt riskard 2000 offers excellent pricing at the hardware level. It is being positioned to attack costs of complex topologies and staffing issues. Its vulnerabili-ties are in applications software and system software in distributed gies, HP displays a lack of sopl cation in system- and network

with complex, networked enter-prise topologies, they will (1) become more familiar with the logistics and politics of choosing implementing and managing com-plex topologies, and (2) they will deploy these complex topologies

more often Although we feel that the fu natives will increase over tit customers looking to take advan-tage of the benefits of networked enterprise topologies should strongly consider more integrat

 Many users with LAN-hased decentralized enterprise topologie will be forced to chose between continued reliance on aging, sophisticated applications sophisticated applications—and the potential competitive disadvan-tages implied by that choice — or greater staffing costs to rework and maintain their code base. We feel maintain their code base. We he that they will have to choose me staff, despite the added costs, they retain these topologies.

For a copy of the complete report, "Costo-Use of Midnange and PC LAN Systems in the Networked Enterprise," co





By Lynda Radosevich

SoftSwitch fixes EMX shortcomings

nitial releases of SoftSwitch, Inc.'s Unix-based electronic-mall inte-ation system fell short in reliability and features, but recent and up-ming versions address those areas, according to a recently pub-

For companies combining independent E-mail platforms into one enterprisewide messaging network. SoftSwitch's mainfrance-based mes-saging switch, SoftSwitch Central, is recognized by users and analysts

its Unix-based product, called Enterprise Mail Exchange (EMX), uses X 400 messaging. EMX offers large users a migration path off the main-

frame and provides small to medium-size companies an entry point. O1 '94: RELEASE 1.3 - Additional directory of 02 '94: RELEASE 2.0 -1

"While users said that early EMX releases suffered initial quality and ance problems, indications are that the current EMX 1.2 release has resolved the most serious reliability shortfalls," said the report's author, Daniel Bium, a principal at Rapport Communication in Tacoma

Better tracking

For instance, Don W. Price, a corporate messaging technologist at Texaco. Inc.'s 22,000-user E-mail network, said the initial EMX releases tended to lose connections. Now, "we've seen the software stabilized, and we've seen better diagnostic tools appear in later releases that help us track messages and audit the system."

To complete the report, Blum interviewed SoftSwitch experts, is try experts and seven large user sites with roughly 20,000 to 30,000 E-mail users and five to 10 different E-mail brands.

The most surprising discovery of his research was that users said they were generally happy with SoftSwitch's EMX support. Blum said. That countered earlier negative feedback about the SoftSwitch Central sup-port because "the mainframe platform is harder to support," he added. EMX is a combined software/hardware system that receives incoming ssages from LAN, midrange and mainframe E-mail systems and value-added networks via access units. Access units are software modules that translate the protocols from the initiating systems. From there, mossages are passed through a Message Transfer Agent and routed to

One of EMX's greatest strengths, according to Blum's research, is its built-in multiprotocol support for X 400, Simple Messaging Transport Protocol (SMTP), System Network Architecture Distribution System and

User ATM plans in sync with vendor progress

BOSEMONT, ILL

DRIA communications veterans who have high bopes for Asynchronous Transfer Mode (ATM) but worry that it might suffer the Edsel-like fate of Integrated Services Digital Networks (ISDN) or Open Systems Interconnect (OSI) can probably re-

Unlike those cart-beforethe-horse technologies, the much-hyped ATM, a func-tional blend of ctrouit- and packet-switching works, already has user interest that stretches way beyond the sesdemic. So said a group of informati

systems executives at a

Attendees said they are busy lining up applications for the still-unproven but promisis networks; meanwhile, vendors and carriers

mand (see story page 79). In a CAMP forum, atten dees quickly stepp

up to the plate to rattle off ways they would use ATM — a high-speed LANWAN technology op-timized to mix data, video and voice — provided

Pann-Bull, a network pla ner at Northwestern University in Evanston, Ill., is wor ing to get all dorm onts onto an ATM net work so they can send "live sors on-line. She said th

university will likely leap fror interim tech such as switched Ethern for ATM because its net

grading anyway gist at the Chicago Board of Trade, said be an ATM, page 78



Exploring the Internet

by a small fraction of their in cyberspace" a few times fine themselves to a few fa-

missing out on some of the greatest benefits of

sion groups offer great shortcuts to specific inform e provide a forum for experts from area ment policy or internat There is an art to getting the most from inable on-line from the InfoSource (teinet to is in terroic net and search under "discussion groups") or inhard copy from SRI Internat cusands of special interest groups access

ble through the internet. Choices relevant to business range from finance, marketing and recented administration to management pol cy, technology and networking

Narrow your choices
Another challenge is winnowing out just the

hits you want or need from the massive amou of information available. Participating in even quickly translate into hundreds of E-mail mes ages daily creating an intolerable amount of e" on the deaktop. Organizations part pating in Usenet, the largest collection of discussion groups, often choose to deal with this by limiting the number of groups received or

the amount of time messages are stored.

The first line of defense for individuals is he specific groups of interest, then screens tentially valuable discussions, select of interest. Such software is freely av the internet for a variety of workstat network configurations. The group called news, software, readers is a good place to fir

X windows lead the way to open systems

Companies struggle to migrate legacy mainframe applications to low-cost open systems computers



By Jean S. Bozman X windows are a mirror on a company's computing infractructure. Origi-pally intended as a

one in a Unix net k, the X Window System is becoming formation systems manager's ally rating from legacy mainframe systhe information syst

ens to distributed open systems. By running the X Window System on x workstations, X terminals and even PCs and Macintosbes, IS managers can tribute shared applications across a

The trick of the X data managem chnique is this: Any X window can dis-sy the same information in exactly the se way, as long as it is written to X11

sdowing standards from the X Consor-n in Cambridge, Mass. Uners at large sites report they are us-

ing X windows to display mainframe and Unix applications side by side on the same screen. Users can transfer data from one X window to another by cutting and pasting -- forging a link between two patible computing environments

"It's a great migration strategy," said John Morrell, a Unix research analyst at ternational Data Corp. (IDC) in Pragham, Mass. "It allows you to use the twork to distribute applications, al-

ving users to get simple access to ose host-based applications without ving to wait for the software vendors to rewrite them."

That will give corporate developers any months, or even years, to write new dications for use in a client/server rork, he said. "You don't have to take a huge leap of faith to go from completely alized host applications to com-

pletely distributed ones," Morrell said.

vironment entirely with an X envir

project manager at BC Tel. a tele

cations firm in Burnaby, British Co

lumbia. "The conversion job is buse, and

it will take so long to do it that we have agreed to take an evolutionary [ap-

ogy, nsers in mainframe shops are tak-

ing the first steps toward client/server technology, industry analysts said

proach], taking it step by step."

By using X Window System tech

X terminals can present a colorful graphical user

interface to the user, even though the computational

work load is run on a lintx

such as Hewlett-Packard

Co.'s recently introduced Envizex line, are outfitted

for multimedia, including v tion and shared whitehoard software

have an X station on their

desk instead of a PC, an IBM

3270 terminal and a Unix workstation." Stikeleather

Kash n' Karry has m

than 150 Network Comput-

ing Devices, Inc. (NCD) X terminals and more than 20 Sun

Microsystems, Inc. servers in its network, as well as

mainframe applications, ac-

cording to Stikeleather

We're re-engineering so

that as functionality appears on the Unix side, it dis-

appears off the mainframe.

The move to rewrite inca-

on why X terminal sales are growing, said Elicen O'Brien, director of ter-

minals research at IDC. Legsey applies-

develop but were known for reliability

oved through decades of use, she ex-

ev applications for elient/server networks at such sites is one

X terminals can also save on desktop space, said Jim Stikeleather, director of

systems development at Kash n' Karry

Food Stores, Inc. in Tamps, Fla. "People

The X protocols,

at MIT and now

~ CCA

es is why X wire

ekstation across the network. Some models, plained New "people want to compare the numbers in the legacy applications and tions.

pew applica A further sign of the trend to mix and match legacy and new applications is a wave of IBM 3270 support on X termi provided by NCD, Dig-

ital Equipment Corp. Tektronix, Inc. and NCR Corp., O'Brien "Our goal is to replace the IBM 3270 en-The X terminal market is growing. with shipments expected to rise from about 200,000 in 1962 to nearly 300,000 ment, but the problem is you can't get there in one step," said Bruce Campbell. this year O'Brieg said (see chart).

IS managers have found important oper-ational benefits from using X Window System technology: reduced costs, in creased data security and improved soft ware administration due to centralized

hosting of shared applications. An benefit is the ability to present a single software application con-sistently, whether it is ed from a PC or a

> Central-site me ment of distributed appli-cations is a valuable consence of using the X dow System, said Terry Bennett, an analyst at

Computer Intelligence/InfoCorp in Beaverton, Ore. "You only change the software if ma

ent lets you do it," said Bennett, who noted that many X terminals do not even have a Soppy disk drive, ensuring that data cannot be removed. Large corlong, including Chevron Corp., Ford

Motor Co. and Wall Str brokerages, use X terminals as part of an open systems mix, towering the over all cost of distribut

systems and gaining securithrough centralized backups. Expense has become o of the leading drivers of X Window System use, along

with concerns about data integrity and software manarrement, neers said. 'It's a lot easier to lie and keep track of softv

because it's on a few machines," said Mark And son, a computer scientist at ed Photon Source research

project at Argonne National Laboratory in Argonne, El. Anderson estimated the ratio of X terminals to Unix workstations tions were generally expensive to at his site to be 1-to-10 but added that the sumber of X terminals at the laboratory

re mainframe and linin converge

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Enterprise Networking

SoftSwitch

CONTINUED FROM PAGE 71

SoftSwitch's System Network Archi

Other access units, such as for CC: Mail ed Microsoft Mail, are separately availabie from SoftSwitch.

"The protocol support is very important. We're using SMTP, Distributed Office Support System (IBM mainframe) and CC:Mail access units to integrate three piatforms," said Jeff Jones, adirec-tor of information technology at the Swiss Bank Corp.'s Chicago office. Swiss Bank has been using EMX since March to integrate E-mail systems supporting

roughly 23,000 users.
Other EMX strengths highlighted in the report include rules-based na ermation to help solve nasty addressing problems when sending mesges between E-mail systems with different naming schemes. Another strong suite, directory synchronization capabil-ities, has been promised, but the users m contacted had not received the software yet. Also, a graphical management

Cronin

CONTINUED FROM PAGE 71

send other related topics. Th "comp" or computer-related category of Uneset, for example, includes more than distinct groups on topics such as client/server technology (comp.client-server), networking IBM mainframes (comp.protocols.ibm) and Unix-be

ms (comp.unix.admin). Operating ting and new polytions are offered in yea r and product-oriented groups fo-sed on a particular type of hardware fiware. Postings are often archived

ilted and downloaded as needed Unenet groups such as comp sources, reviewed and all sources also open ors to another Internet business re-urce: free and public domain software.

in is university librarian at Boston Colle she manages a highly automated notgree on international perspectives on innaforming American Buri-ed by Van Nostrand Reinhold

> COMPUTERWORLD AREERS

er interface, support for symmetrical ities are high poin One drawback is that there is no sup

ert for the X.500 directory protocol yet, cording to the report. In many cases, that is not a weakness.

but among Fortune 500 and government users, there is a small but growing percentage of users that want to be early X.500 adopters," Blum said. For instance, Jones said the X.400 and

X.500 standard seem to be the way to keep E-mail systems in the mainstream so they can interoperate with products in the future. SoftSwitch said it plans to

add X.500 support in future releases.

Also, it is difficult to discover up front how EMX will perform because Soft-Switch does not publish benchmarks, and in multiprotocol scenarios, the company's published performance "goals

Blum's research also found that EMX

rectory synchronization software, said he plans to move to EMX's ve



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User, vendor ATM plans in sync

CONTINUED FROM PAGE 71

ticipates less flashy initial uses for the technology. "It solves throughput problems, and that payback is usually justified in the backbon first," where the exchange would likely get started with the technology, be said.

Because ATM specifies fiber-optic cabiling as

Because ATM specifies liber-optic cabling as its medium, users with copper wiring throughout much of their enterprises are likely to start with the backbone, where fiber is more prevalent be said.

Issues still to be addressed Products to accommodate such applications already exist in the form of switches from companies such as Adaptive Corp., Fore Systems, Inc. and SynOptice Communications, Inc. However, interoperability among vandor products,

coagestion control enheuses and blending ATM with today's shared-modium LANs must still be resolved, said conference speaker Konneth O. Zoline, president of Kanneth O. Zoline and Associates, a networking consultancy in Chicago.

working consutancy in cincago.
Meanwhile, other users said
the technology should simply deliver cheaper bandwidth: Mixing
various applications over one
service rather than running
them over separate circuits
means the economies alone

And the ballyhoosd interactive services on the drawing board by phone and cable company partnerships, including the recent Tele-Communications, inc/Bell Atlantic megamerger [CW, Oct. 11], will rely on ATM technology, Telline and

Such situations, in which users are carefully plotting where and how they will deploy the

technology, diverges from the histories of ISDN, OSI and even Fiber Distributed Data interface (FDD). It has taken years for users to figure out applications to juntify ISDN, for example, however, the killer use may finally be arriving in the

form of the telecommuter and remote user.

With OSI, it will simply take much longer than expected to make the networking standard ubiquitous at all levels — and thus useful — to most organizations.

Bogged down in the process

And FDDI missed a portion of its window of opportunity, targely because of the cumbersome formal standards process. ATM is circumventing that problem by assembling a much more nimble group of interested vendor and uses parties known as the ATM Forum. The forum has been malling down preferred standards increas which it then presents to the formal standards.

has been nailing down preferred standards pieces, which it then presents to the formal T1/81 standards body under the ampices of the CCITT.

numpices of the COTT:
Users expressed confidence
that the networking community
has learned from its mistaken
and that ATM is a network that
well hit the mark. One user said
his hespital is already undergoing the infrastructure revumprequired to support ATM and

Another user said his firm is looking ahead to interactive video, combined with collaborative computing, simply to cut down on travel costs, as intracompany personnel become more geographically dispersed and on-line collaboration with business partiers

picks up.
"There's software today for this kind of sctivity but not the bandwidth" to render it mainstream, which ATM should provide, he said. Regional Bells do their part

3 West transally became the latest regional Ball operation company (EEOC) to also plane for ATM service. EEOC do playment of ATM is necessary for Uning the original of a

unterprise ATM astrock running on local public service Partic Bull in the only RROC cloims to reli out service (Descenter), though all repertedly here ATM trials in

phase. Have white, 120 West of Advanced Communications are reall relative surface this messile mapped out a three phase. ATMS program to elevable over the next two press, legislating with infrastrature deployment— which is nearly excepted— and contenue to

sin, to about most mouth. The trial participants business on 15-company contextinin in its Busines, Culo., region and otats universities and growtomical age

Desider, Colo., region and elain universities 464 gives little on com in Gregon.

At the end of 1894, US West will openly nervices based on trial

solutions.

Figure 1 the following devictors between 1 to 1.

- What painting apode to other Porements.

Over whether ATM at T1 (1.5M bittons) speeds and but clal. This is because large charits of AUM overhead.

pology — for which users will initially pay a present — and warrisin at larger appeals.

Whather to offer variable or constant bit rate interfaces. How

ATM critishes teday causes accumundate both functions.

Whether pricing about to Set-rate, non-bound or a state.

"The definition of ATM purvier" in "Laboury clear." said fin-

"The definition of 'ATM nerview' im I strongs count," in many Conbran, principal at Vertical Systems Group, a or in Dedhem, Mass.

vices, but these require ATM goes on the nace's premium, and
"there isn't much out there tester."

applications hadeed; witness, for emergie, long distance provider WITM's channel extension service or HFS Dahmet, Inc. 's LAN interconnect services, both based on ATM infrastructures.

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etrix 4000 disk storage competition behind.



Some people will try almost anything to speed up the leap to client/server.

OBJECTIVEW

In the rush to develop client/server applications, many people are grid to the content point of the transet people are grid to the contents. But the transets people are grid to the contents and non-more applications and convenient providers provide power and acceptanted development. Superior application and contents applications are contents as a provider power and acceptanted development. Superior application of the support, insigning and consulting arcvices to guide you through all phases of client/server development. Only Objective whorens time to production, leverages your programmers current stills and delivers powerful client/server applications on any scale. Don't settle for less functional loods like SQL (windows or Powerfulders Compare usuability. Compare code generation and performance. Compare protect.

KnowledgeWare*

Bell faces regulatory hurdles By Ellis Booker

Well before Bell Atlantic Corp. and Tele-Communications, Inc. (TCI) can merge or offer information age services, their merger will have to gual the approval of shareholders, the Federal Communicaons Commission, antitrust regulator ad legislators on both sides of the aisle

ano segmanors on both sides of the siste.
Unquestionably the most serious regulatory obstacle is the prohibition on regional Bell holding-companies from offering-long-distance services catalide of
their territories.

their territories. That restriction, a mafor piece of the Modified Final Jud (MFJ) ruling that broke up AT&T in 1984. would seem to be compromised by TCFs assets. With more than 20% of the U.S. cable customer base, TCI has 1,200 cab systems serving more than 10 million

ubscribers. But a Bell Atlantic spok company will "move quickly" to seek arguing that the MPJ rule does not address video signals and that "long-dis-

Haven Tree Software Ltd. has intro-Haven Tree Software Ltd. has intro-duced Nodemap Version 2.0, a software program that autoessitestly updates No-vell, Inc.'s NefWare network diagrams. The product is a DOS-based, Windows-

compatible program that employs a se-rice of standardized shapes and icous to

Kingston, Ontario, company.

Postures include an "intelligent" line

Nodemap 2.0 tracks interconnected

and supports more than 270 output de-

Advanced Digital Information Corp. has introduced the Virtual Library Sys-tems 8 (VLS-8) system, a 110G-byte, 8mm

The product employs Exabyte Corp.'s half-height EXB-8505 Sanm tape drive.

The union of VLS-8's 11-cartridge maga-zine and the EXB-8565 running in data

up and data management applications according to the Redmond, Wash., com

A front control panel provides a full range of library control and diagnostic

The single-drive library is priced at

ers an unati capacity of 110G bytes for network back

printers, file servers and workstatic

ate graphic representations of comtwork configurations, according to the

router and a text formatter.

Nodemap 2.0 costs \$299.

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solidate system information and cre-

ance video signals do not intrude on long-distance voice services." Bell Atlansaid it plans to sell the 14% of TCI ca-

tic said it plans to sell the 14% of TJ ci-babling that operate in Bell Atlan-tic's six state territory, thus avoiding anticompetitive claims. Bell Atlantic has not decided what it will bell with New York-based Teleport Communications Group. Inc., a local-access bypass provider in which TCl has a 30% ownership.

Video content allowed in a related event last month, Bell Atlan-

m a reassed event test monta, hell Atlan-tic won a precedent-etting victory in a federal appeals court in Alexandria, via, which ruled the company could provide video content as well as transport over its network. Bell companies have been prohibited under the 1984 Cable Act from

prohibited under the 1894 Cable Act from providing video programming. Bell Atlantic has long-standing inter-ests in cable TV and is testing a technol-ogy called Asynchronous Digital Sub-serther Loop to pump compressed video signals over a twisted-pair wire to about 0 to 400 subscribers in Artington, Va.

1100-FL20 fiber-optic series of 10BaseFL stand-alone hubs.

The products support either 10 or 20 10Basel*L ports in a compact 3%-in. rack ble unit, according to the Richrdson, Texas, company The series also supports an additional optional port of either 10BaseFL or AUL

Management options include support for all nine Ethernet Rmon groups and advanced Simple Network Management Prices for the 1100 Series 10BaseFL

ub start at \$3,600. Dotteal Data Systems (214) 234-6400

Hayes Microcomputer Products, Inc. has introduced the Hayes JT Pax 14400B Duel, an internal dual-port fax board.

According to the Alianta company, the product supports Group 3 fax speeds of 14.4K bit/sec. and full-featured digital roice capability.

The product can be used in galeway or

LAN fax server applications and for fax The fax board comes equipped with dicated fey and voice The Hayes JT Pax 14400B Dual cos

► Hayes Microcomputer Products (404) 840-8200

Product short

21ConNet, Inc. has announced Mobi Vare, a software system. The product allows mobile professionals to conne with their corporate computing enviro ents over wireless and traditional ad-line telephone networks. Users can ad and receive files, faxes, electronic all and printed documents in compressed and encrypted form. Cost: be-gins at \$500 for a single-user system. 21CenNet, Richardson, Texas (214) 690-

Chip deal On the eve of the pple Computer, Inc. Chief Executive Seer John Sculley, cellular modem pai-it-holder Spectrum Information ting its technology. The chips will be

App gets wireless link XcelleNet, an Atlanta maker of softw tools for automating trunsaction-base computing environments, will report ly soon offer a link to the RAM Mebile ty now outer a time to the mand Medelle Data wireless messaging network in its Remote Ware product. Roving users would gain wireless access to informa-tion housed in home-office distabases, such as custome office mumbers. such as customer order numbers, inve

New Cisco distributor ster maker Claco Syst

Ameritech Corp. will begin distributi Cisco'a entire internetworking product line in conjunction with Ameritech's not work integration and remote network

Phones to get 'smart' Tandem Computers, Inc. bas agreed sell VeriFone, Inc. "smart screen" tele phones to not as intelligent interfaces to Tandem servers. The phones, expected in mid-1994, will include a screen display keyboard, modem, magnetic strip card

ing card-based transactions. **Expediting FCC licenses** With eyes on the sky, two compan planned worldwide low-earth ast

crate the licensing process for this tech nology Motorola Satellite Commu-nications, inc. and Leval Qualcomm Satellite Services, Inc. filed a joint proal with the PCC

Nextel billing streamlined Computer Sciences Cerp. (CSC) signed a \$25 million contract to provide Nextel Communications, inc. with a system that lots Nextel send customers one bill for different kinds of cellular nervices such as paging, phone and voice mail. Also, the system will help track inventory

Reuters turns to paging Reuters America, Inc. will use his rela, Inc.'s one-way Embare messa network to deliver financial, busine

Tech Talk

► Advanced Digital Information (200) 581-5004

\$14,500. The fully configured, dual-drive library costs \$20,900. Optical Data Systems, Inc. has intro-duced the ODS Infinity 1100-PL10 and OLD DOG.



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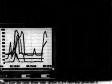
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VAX shares Digital's attention

MAYNARD, MASS

Digital Equipment Corp. may be in the thross of "Alpha-holism," a term that international Data Corp. analyst David Smith uses to describe Digital's emphasis on its new Alpha AXP computing technology. But the company is not letting the tap run completely dry on its vener-

VAX machines still outsell their rumping-up Alpha coborts by a wide margin, according to Digital executives. As a result, while the hardware portions of the company's Oct. 12 product blitz focused mainly on Alpha workstations and servers, the VAX got more than a passing

Digital revamped the low-end workgro and departmental members of the VAX family adding five new MicroVAX 3100 and VAX 4000 is (see chart). It also said that a comoverhaul of the VAX line is in the works, from workstation level up to the VAX t0000 main-

Alph: snext While the VAX architecture is not being dead ended, Pauline Nist, vice president for Alpha and VAX servers, said Digital has no plans to

develop any all-new VAX microprocessor de-signs beyond the current NVAX technology. "Ala is essentially the next microprocessor" for

The VAX systems introduced two weeks ago de one machine, the VAX 4000-700A, with an NVAX processor sped up to 100 MHz from the previous maximum of 91 MHz. The other



No big gains

Digital officials snowledged that the corpany has not yet sarted gaining back the workstation

recent years.
"But certainly we suid expect now that this will begin to appen," said William

Demmer, vice computer systems group. The Alpha back by stack of

applications but are ported by "an

marily by means of increased I/O throughput,

Nist said Digital will likely do an op shrink of the NVAX device for the next gener tion of VAX machines, which should allow clo speeds to be increased beyond the t60-MHz mark. The company also is looking at increasing the memory caches included with the pro-

Terry Shannon, an analyst at D. H. Brown As-sociates in Port Chester, N.Y., said an optical shrink would be the cheapest way for Digital to expand the VAX line. The overhaul is expected within the next year and should appeal to users who "are not yet willing to migrate" to Alpha,

"People are still buying first-time VAXs," added Wes Melling, a Gartner Group, Inc. ana-tyst in Stamford, Conn. Melling noted that the new low-end VAX machines actually did better than Alpha systems in transaction-per-second cost on TPC-A beach-

arks run by Digital prior to the recent The VAX line remains central to the purchase plans of

ne Digital customers. Dave Federman, vice president of systems and planning in the broken/dealer services department at Chemical Banking

VAX machines are still "our bread and butter" computing plats

"From our point of view, it's too early to think about Alpha," Federman said, citing a continuing lack of key layered software packages.

Pacificare Health Systems, Inc. in Cypress.

Calif., will probably not move to Alpha in a seri-

ous way for another year or more, said Mat Holdrege, senior network specialist at Pa Care. The company recently bought VAX ma-chines and is open to getting more if business growth makes that necessary, be noted. Other users have closed the door on VAX.

wever. The ongoing VAX development "is to DEC's credit, but we're only going to be doing Alphas," said Tim Bird, director of information services at Paws, Inc. in Muncie, Ind. "Alpha is a faster box and it's definitely the futur

They're putting more VAXs out for the e sers who can't move to Alpha yet, but I can move most of my production and that just makes a lot more some than trying to stick with the VAX," said Bob Cloninger, data process manager at OK Industries, Inc. in Fort St

72 MHz

Impatient Legent to build own DME By Gary H. Anthes STREETS VA

No longer willing to wait for the Open Software Poundation's (OSF) much-delayed Distributed Management Environment (DME), Legent Corp. has an-nowneed plans for building a DME of its

Legent's strategy will bridge hosts and check/server systems through a suite of ware, application programming interfaces (API) and development tool kits. As such, it spans Legent's product line, copassing multiple operating systems, ading MVS, Unix and OS/2. Legent said its approach - which

oulds substantially on technologies from other companies - will allow users to reduce staff costs and improve systems reliability by simplifying resource management, software development and distribution, troubleshooting, backup and recovery and user administration

Environment (XPE), pulls together under one architecture a number of initiatives started during the past three years. its announcement was prompted in part by a spate of bad news inst summer that sent Legent's stock price tumbling and upted users and analysts to charge the company with failing to keep them ully informed of its plans [CW, July 19].

XPE is no copyent Legent Chief Executive Officer John Bur-ton said the middleware, APIs and develcoment tool kits in XPE will be used by

gest, its customers and by third-party tware vendors. At the same time, be rentiated XPE from DME.

"DME was designed for Unix servers and desktops," Burton said. "What we've done is extend from the bost all the way to the desktop those common services Burton said that although Legent is a

per of OSE it could not wait for the pieces of DME to roll out over the next

set. Nevertheless, DME and XPE will be complementary, and users will be able to mix and match both architectures.

The middleware components of XPE include user presentation services de veloped using graphical user interface technology from Visix Software, Inc. in based on Pipes technology from PeerLog-ic, Inc. in San Prancisco, object services ed on technology from Tivoli Syses, inc. in Austin, Texas, and directory

most of the remaining features will emerge by the end of 1994, Legent said. out cases, XPE functions are emi ded in Legent's systems mans products and estall no extra lice

operately seeking XPE. Sen we heard about XPE we said,

When? We need it desperately." said Lee Figliucio, vice president of informa-tion systéms operations at Progressive Corp. in Mayfield Village, Ohio, an insurcompany that is moving to ch

server. "It saves me from having to do all that work." The alternative would have been for Progressive to develop its own middleware, APIs and tools. Others were less enthusiastic. Brace

Alien, vice president at Meta Group, Inc. in Westport, Coan, said Legent is at least 16 months behind Computer Associates rnational, inc. in its rollout of prod acts for distributed systems man-

ly briefed on XPE by Legent manage ment, said Legent's "buy vs. build" as proach works against its claims a integration and interoperability. Legu will find it difficult to get the same inte erability that CA has achieved with gement products, be said. One of the objectives of XPE is to a

urces across dissi systems using just one workstation That idea was embodied in a limited way in Legent's recent alliance with liewiest Packard Co. to develop tools spanning name and client/server envi gressent (CW, Sept. 27).

Sequent pushes the Pentium envelope

By Mark Halper

STATESTON, OSS

Sequent Computer Systems, Inc. has driven its line of Unix multiprocessing minicomputers into the next dimension by unrealing its latest processors based

Although Sequent did not release transaction processing benchmark figures, it said the new Symmetry 2000 modsis double the price/performance of Sc-

quent's previous Symmetry 2000 line, which is based on Intel[®] 1488. Kevis aloye, Sequent product manager for feature systems, said the complex schieved the performance gains by means of a more powerful processor. Sequent doublet the width of the UO but from 8 bits to 18 bits and used 39-in. drives that ancommodate 78 UP or equents.

The new lineup The Symmetry 2000/790, 2000/490 and 2000/250 scale up to 30 processors, 10

by through two-processor boards housed in any of the Symmetry's 26 add-in slots. Mike Higgins, technology support manager at Byer California and a beta contourer for the Pentium box, said he co-

pects to eventually move Byer to the new machines from its clustered 466-based Sym-

metry systems.
Higgins lauded
Sequent for doubling Symmetry's bus width, noting that a fafure to do so would have crippled the 100

er than the

performance because the Pentium uperates significantly chines for a while

486.
"When you have 30 Pentiums in a machine, you better have a screaming to bus or you're going to throttle your processor," Higgins observed. Sequent's move to 3½-in, drives was a

boon to performance because the smaller form factor means each drive in a fully stacked storage cabinet will reside closer to the system and thereby require less cabling. As cable distance in creases, performance suffers, according

to Higgins.

Dick Lund, vice president of information systems at Wausau insurance Co. In Wausau, Wis., eald be does not plan to rush out and replace his 485 Symmetry box with a Pentium unit.

"Right now, we have pleaty of capacity," said Lund, who converted Wassau's pension management program from an IBM 3090 to a Sequent box running an Ornele Corp, database in early 1982.

More change Futhermore, Lund noted, Wass

Futhermore, Land noted, Wassan's parent, the Nationwide Group, is considering consolidating its perasion managment system with Wassan's, a move that could entail switching platforms again. Joyce said Sequent is emphasizing askes of clustered configurations under the moniker Symmetry 2000/990. It is offering each of the mudels in a two-box quest increased storage capacity slightby to 8960 bytes from 7686 bytes. Mean time between disk failure also improved, to 890,000 hours from 300,000 hours, Joyce said.

Rivala cooperate Sequent buys the 5%-in. drives from minicomputer rival Hewtest-Packard Co. Like Sequent's earlier Unix models, the Pentium boxes, which are available now, run the company's Dynkrytx Usix operrun the company's Dynkrytx Usix oper-

Prices range from \$83,000 to \$1 million, depending on the configuration and number of users. A Symmetry 2000/220 with two processors, 64th bytes of memory, 20 bytes of storage and a 16-user Bosess is priced at \$85,000.

conse is priced at 885,500.

A Symmetry 2000,900 two-box cluster with two Pentiums per box, 64M bytes of memory, 8,50 bytes of storage and two to-user licensee lists for 827,900. This price also includes three Ethernet cards per quisten, a shared expansion cablest, two copies each of ptz/Cluster, ptx/LAV and ptx/TCP/IP software, plus two weeks of training.

Unisys clears trail for migration to V series Ports of Mapper development tool kit to run on four different platforms

By Thomas Holland

Unisys Corp.'s promise to deliver a migration program from its older V series to its newer A series, was warmly received by castomers at the vendor's recent user group conference here, as were the company's plans to port its Mapper development tool kit.

development tool kit.
The Mapper ports will enable Unisys
mainframe applications to run on Wis-

RS/8000, No-

vell. Inc. Unix-

Changeover

About 46 of Unitys*
Loop V series
Loop V series
Louteness have
Computer
Corp. SPARCstablen emaking
Look of the remaining
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sons of the remaining users are "prime considerar," said Dennis M. Murphy, a Bishop veries program manager. Profession 2 fevolution V to A (RVA), includes some challes ware and services to add the transition to

an A series platform. EVA/Workbench is a PC-based migration tool kit that provides users with a

tion tool at that provines user win a step-by-step migration guide, including an inventory analysis of applications, management of files transferred to the A series and on-line transaction testing between both curironments, according to

Mike Deneen, a director of product marketing at Unisya' U.S. division. EVA Terminal Coccistence is another

is nicomposent in the EVA migration packries ag. This set of alternative terminal orries ag. This set of alternative terminal orries agreement to connect one or more Asrealized to the set of the set

The third piece of the terminal coexistence series is CP2000/BNA, which allows any user attached to a CP2000 network to access applications on any A series or Vaeries boot in the network.

Already in use Although the EVA products and services are still in beta testing and will not become generally available until the first quarter if 1994 — when prices will also be announced — the program has already been used to migrate some early customers, including United Fire & Cou-

alty Co. (UF&C) in Cedar Rapids. Iowa. UF&C, a VS80 and VS10 shop that be gno migrating 650 batch programs and 75 on-line Cobol programs in April 1962, completed the transition to an A16 mainfeamen in Mg.

The project, which included the conversion of 27 million LINC database records over the Thanksgiving weekend last year, went smoothly without impacting any of UF&Cs end users or custom-

ers, according to Bob Kenward, vice president of MIS at the life insurance

"We had never been through a conversion before, but we had heard a lot of warstories." Keemed said. He said be could have "miltod out" UPAC's V series machines for another 10 years. "Set there are no [research and development] dollars going into the V series machines." Unisys plans to discontinue V series hardware, engineering and mannfactuing support at the turn of the century.

Also at the user group meeting, some users volced their extreme displeasure over what they see as some pricing imbalances by the vendor. Y300 users, to recample, have nees, their software liceusing fees rise by 30% during the past two years despite a lack of enhance-

In contrast, users of V400 and V500 mainframes—which use the same operating system as the V300—have experienced 5% software price hikes, sameally V300 sites make up more than 59% of the Vacries installed base, Unisys said.

Unisys' response was blust. "You have

Unisys' response was blant. "You have to accept that software prices are going up while hardware prices are doing down," Densen said.



plays to restlying an Oct. 50 relines of a port of Openshapper, it is application development of styleromanut, to Windows. For to them's SPARCetations are stated for four-to-quarter delivery.

one Mapper application developent functionality with Dusquer orthomot, a Unitys Windows-based applical user interface. It will be feed at 9000 for a developm's tool t; and near copies will anot \$5000, ac-

att; end-near capies will cost 1800, a cording to Jey Cleanwillery, vice pres deut of marketing and program man agencent at Unioys' Heftware Products Group.

Robert A. Kilgore, a systems are jut at the Tours Department of Heman Survison to Anniis, wi testa testing Operatiopper I drive strasp Jeno, mid he pi

to develop ensuates informat gratami. Happer peris to then SPARCet Gong would be a book to the Call Department of Water Resources

financiamente, Alan L. Compen, chief de the matt's disputch outport brown, and he would like to more sense of the agency of Unitarys 2000 and infrance plicestionis early SPARCE at steem. Uniting sales please sent year to detheir unitar versions of literpare for The Posts Corm Desertion. Events Proch.

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down in the halls. No phone tag, just the easiest way ever to plan a meeting.



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In Touch with Tomorrow

TOSHIBA

Software AG forms client/server team with NCR, Apple

Marketing and product alliances link desktop and server technologies

By Gary H. Anthes

[CW, Sept. 27].

d a 911

tion, San Antonio will use NCR's Life-Keeper to link two servers. If one fails, LifeKeeper will start the application on

All-around better support Frank Stromboe, director of information services for the city, said the newly for-malized relationship between Software AG and NCR will ensure that new products or product ports will support each other's products and that joint custom-

ers will get better support.
For example, he said, if a CPU fails LifeKeeper must be able to quickly and accurately restore Adabas databases. "I hope the agreement means we could work with either vendor and get it re-

to come to grips with the market demand for comprehensive, easy-to-use tools to develop client/server applications with

ident of corporate computing at Ab-en Group in Boston. Between now and next year, Software AG and Apple agreed to do the following: +Port Adabas, Natural and middleware products. Entire Net-Work and En-

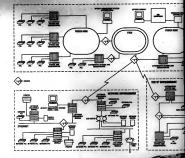
*Interface the Apple/Events m ocol with Software AG's Entire Broker Gateway to enable Apple Maci sting under IBM, Digital nent Corp., the Open Soft tire Broker, to the Unix-based Apple





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ting Software has ann tran Structure, an add-on mainframe module for the Gentran family of elecic data interchange (EDI) manage-

According to the Dublin, Ohio, comp ny. Gentran Structure was designed to translate between internal business ation formats and a proprietary

with all the leading open management platforms:

HP OpenView," IBM NetView '6000, Novell' NetWare

usi technologies. And we've designed a management

architecture that's flexible enough to grow as your net-

work does, protecting your investment. The Optivity

network management system will meet your needs

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Management System" and SunNet Manager."

today, and down the road.

or private EDI standard.

BRS Software Products has introduced RS/Search C/S, a product that allows According to the McLean, Va., company, this release enables BRS/Search to support the customer's choice of stand text, Windows and Macintosh inter-

es and a variety of hardware platforms and operating system The client/server software opera Unix, Digital Equipment Corp. 'e VMS and Microsoft Corp.'s Windows NT servers d contains all of the basic search and print functionality of the original host

er prices start at \$250.

• RRS Software Products (703) 442-3570

Client prices begin at \$1,500, and serv-Tone Software Corp. hes and e 2.5 of DCC-Compact, a high

mance data compression tool for Inte-According to the Ambient, Calif., com pany, DCC-Compact provides DB2 com pression rates averaging 50% to 50%. Version 2.5 offers an analysis feature that assists DB2 installations in select

for each DB2 data structure. The product fully supports DB2 Ver-sion 2.3 and DB2 Version 3.1, and DCC-Compact's Ziv Lempel compression is fully compatible with IBM's Ziv Lempel

The product is CPU licensed and is available for MVS/XA and MVS/ESA. Pricing ranges from \$19,000 to \$26,500.

Tone Software (714) 991-9460

Generic Seftware, Inc. has announce the W-2 Magnetic Media and 1090 Mag netic Media for 1995 reporting. According to the Madison, Miss.-base

According to the Madison, Miss.-bs company, W-2 and 1999 Magnetic M

instantly give users the ability to mag netically report W-2 and 1000 forms to th government on tape or diskette

poverament on tape or distortie.

Peatures for the systems include verification reports; interactive, edited data entry; a multicompany capability; and on-line help text.

The products are available for IBM's A8/400 (mailve), the System/36 and System/36.

W-2 and 1099 Magnetic Media each cost \$395 per CPU.

16011853-1189

Search Software America has intro-duced SSA-NameS Version 1.6, a name search software product that allows us ers to perform a name search of peo and company names regardless of varia-tions such as abbreviations and errors in

pelling, phonetics and keypenching.
According to the Old Greenwich,
Conn., firm, the product is used for data-bases with 100,000 to 100 million records.
SSA.Named is available for Unix, PC-

DOS, IBM, Digital Equipment Corp., Uni-sys Corp. and Tandem Computers, Inc. A perpetual ticense for SSA-? costs between \$24,000 and \$56,000

Search Software America (203) 698-2399



Gentran:Structure is priced at appro nately \$10,000.

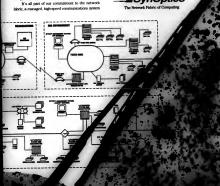
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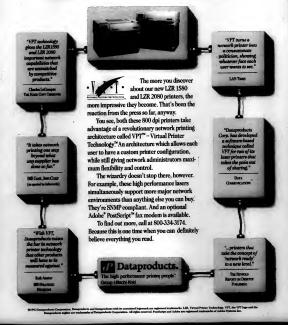
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Vendors tackle software version-control beast

By Melinda-Carol Ballou

One of the biggest headaches for velopers in client/server envireaments is managing different range of platforms and develop-

ment groups. Realizing this, an increasing number of version-control tools vendors, including Intersols, Inc., Legent Corp. and Softool Corp., are targeting client/server. Tools vendors such as Powersoft Corp. are linking their products to existing version-control and configura-

management tools. While version control simply tracks changes to a particular apon component over time, figuration management ad-

intersoly began shipping a Winows application programming interface (API) earlier this year, facilitating the development of such links. PVCS has garnered the liou's share of the version-control market at about 70%, according to Ed Acty, an analyst at international

Data Corp. in Framingham, Mass. Intersolv officials said more than 30 gateways between PVCS and other development tools curreatly exist. However, use of those guteways

can offer its own challenges, according to analysts and users. Versioning and configuration nanagement need to be "built into the product from the ground up in By Ed Scannell and Michael Visard Win32c "are not that much different than Win32. They are merely subsets of Win32," said

Whither Win32 woes?

Trying to extract itself from the tangled web it

has spun, Microsoft Corp. is now steering de-velopers toward the full implementation of its 32-bit Windows application programming interface (API).

what features of that kit they want to integrate what features of that kit they want to integrate in their applications, depending on whether they are writing for Windows S.1. Chicago or Windows NT. During the past couple of years Microsoft has talked fervently to

developers about writing their ap-

stions to take advantage of subsets of its Win32 API, which will ation applications to run on vari-

Coping with con

This new strategy is intended to resolve the confusion brought on by Microsoff's initial decision to promote three variations of the Win32 kit.

This altuation has conft velopers, who thought the extra two versions — WinSis and Win32c - were separate and sigcant alternatives to Win32.

nificant alternatives to winxe.

Many believed they had to place beta on which one would drive the volume platform for Windows.

But as the company begun out-lining Cairo and Caicago, its future operating system development atrategies for Windows NT, the

company found it more princent to company found it more princent to complaints a single kit. Microsoft officials, who admit they did not clearly articulate their message, now say developers should focus primarily on the Win32 AF. If developers wish to optimize an application for a particular platform, they can focus on supporting only specific elements.

The masse glasse.

The confusion steems from developers' using the term Win32s to describe a subset of the kit that allows applications to run on Windows 3.t and NT, and a second subset, referred to a Win32s, that optimizes Win32 applications for

Waste, that optimises Waste applications for incid Comp patients.

"We accread up, We got ourselves cought up to our selection of the composition of the composition

Microsoft addresses confusion over versions of API

Doug Henrich, Microsoft's director of de Henrich and other Microsoft officials now say developers writing applications to the sev-eral existing and future Microsoft operating

Simply put, Win32s represents Microsoft's

• Winsi (stretched to 32-bit)

attempt to take all the (4-bit AFIs in Windows 3,4 and allow developers to do 32-bit implementations of them. "Developers just take their ti-bit Windows source code, do a small amount of work up frost, and from there it is a straight recomple," Heartch said.

The WinZite soid AFIs, for the most part, is an extension of the WinZite and AFIs, but it specificates the contract of the WinZite and the contract of the WinZite and the contract of the WinZite and the winZite are set to the WinZite afis the most part, is an extension of the WinZite AFIs, but it specificates the winzite and the

an extension or the Winder AFs, but it specifi-cally supports features in Chicago.
"The business of Winder was sort of silly on our part. It is just a subset of AFs that will be natively supported in Chicago, not something that was to be an alternative to Winde," Hen-

rich said. Developers should think of these variations as an evolution of the WinZa API that they can use or not, depending on their development goals. The currently available WinZa colventration of the WinZa colventration of the Control of the C

dresses all the components that make up an application. It identi-fies and controls changes and manages the overall change proes. Configuration management almost like a bill of materials for n application: It is an aggregate

opers as they move forward. "We are looking at elient/server on a pi-lot basis, and controlling our uroe code] will be important bex environment," said Dan How-Corp., a natural gas company in San Antonio. "We're just at the tip of the looberg."

Powersoft is addressing version ontrol by linking its PowerBuilder development tool with existing to be under the control of a single wender," said Rich Finkelstein president of Performance Comput-ing, a Chicago consulting firm.

"The multivendor products are difficult to deal with," he said, be-cause no vendor will take full re-sponsibility when problems arise.

Waiting game
Powersoft officials said they have
waited to implement configuration management for PowerBuilder antil other products such as
those from Softool and Legent we shipped; these more fully ad-ces configuration management. are robust connections will ship with the next point release of Pow-

Builder, they said. For its part, Softool late last

Oracle, Sybase map out multimedia maneuvers

By Kim S. Nash

Oracle Corp. and Sybase, Inc. have laid tracks for nearly polar-opp tracia for nearly polar-opposite multi-media development tool strategies. While Sybase guns for a piece of the high-ly competitive Windows deaktop realm, Oracle envisions a digital information highway where cable and talephone com-panies use Oracle tools to build interso-

unlikely to rosr into typical information systems shops any time soon, observers said, because multimedia remains a

fringe technology. "Sure, pretty pictures and sound could make some applications better. but do traditional business sys-

nes no crassional number sys-tems really need such func-tions?" asked Robert Gentry, vice president at Database Server Systems, Inc., a consulting firm in San Francisco "We don't see much call for

multimedia in traditional busi ness applications right now, Gentry said. "Maybe it'll happ His company helps users move app

cations from mainframes to Unix-based platforms running relational databases. Most of its business, he said, compris Sybase and Oracle users.

Alming high

Oracle's main thrust in multimedia is not the average is department but cable, content and phone companies, such as partner US West. IS shops will beautit when the technology trickles down to Orscie's bread-and-butter database prod-uots, according to Tim Negris, Oracie's senior director for server product marketing and corporate strategy.

The Redwood Shores, Calif., company is expected to ship in January Oracle Media Objects, an object-oriented tool set for huliding interactive TV systems

newspapers and movi [CW, Sept. 27]. The appli run on massively parallel proce such as those from NCube, inc., Thi Machines Corp. and others. Couch pota

or would access them via set-top boxe at combine television and PC features ump up its presence in the application recently acquired products with inter-nally built offerings [CW, Aug. 16]. PCs equipped with Windows are the pist-

forms Sybase has in mind for its Mom tum product family. Because Sybase has been historically weak in the tools arona, Sybase's SQI

Server database users have had to huy development aids from Sybase-exaction third parties such as Powersoft Corp. Sybase's

products are due to start shipping in mid-1994 However, for Syb multimedia vision to becor

multimena vision to become reality, the Emeryville, Cal-it, firm must unite disjointed products, analysts said. Gain Momentum, a tool in-herited with its acquisition of Gain Techuclogy, Inc. last year, is based on an object-oriented database from Objectivity

Sybase recently introduced additional lossentum tools to work with Gain, but

Monastum tooss over wan tonic. Here are based on Sybase's SQL Server relational database. SQL Server can support limited object functions, but a guif easts between the two databases, according to Ranjeer Varma, an analyst at New Science Associates, inc. in Westport, Conn.

"Betore IS can think about using [Mo-

mentum products). Sybase has to figure out how to get the two databases to converge, Varma said.

According to Sybase officials, the dis-parity between the two products is an is-

Microsoft to offer class libraries for OLE

By Melinda-Carol Ballou

Microsoft Corp.'s plans to provide class libraries for its Object Linking and Embedding (OLE) environment are expectod to make it easier for developers to cre-ate OLE 2.0 Windows applications. Microsoft will make available by year's

end its Microsoft Poundation Class (MPC) for OLE. Roger Heinen, sonior vice president of development tools, de-scribed MPC as a set of templates that de-velopers can tailor to build specific Win-dows applications. This will allow developers to use ready-to-go templates for OLE 20 instead of having to learn the more arcane OLE specification.

al Developer's Conference in San Jose Calif., during the first week of December

Calif, during the first week of December, company sources said.

Developers agreed that linking O.E. with MFC will make creating applications enaire. Pro Roger Spitzig. a senior systems segiment at The Mutual Life Amaranee Company of Canada, offering O.E. support with his site's application proved to be too much effort.

"We had a deadline for getting our systems and and the commenting of O.E.

tem out, and the complexity of OLE . ed it to be a larger job than we had

pers to use ready-to-go templates for IE 2.0 instead of having to learn the nore arean-OLE specification. What likely, MPC support of OLE 2.0 will Most likely, MPC support of OLE 2.0 will



"SHE ONLY DROVE IT TO CHURCH ON SUNDAYS."

Intersolv opens Gateway

Version-control giant expands Polytron system

By Melinda-Carol Ballou

ersolv, Inc. bolstered the company's Polytron Version Control System (PVCS) last week with support for a greater range of operating systems, workbenches and better version control for LAN-

PVCS Production Gateway 2.0 for main of the state of the state

This link is built on IBM's Advanced Program-to-Proeol and provides comnd security for host-to-

LAN or LAN-to-LAN networking, the company

interfaces between Microsoft Corp.'s Vi-sual C++ and Symantec Corp. sC++ de-relopment environments. The link to the soft took will allow Visual C++ ru to access PVCS commands and onhelp from the Microsoft Visual Work-

Developers will be able to record each processive revision of a work file, use altiple locks to prevent multiple users on applating a file simultaneously, easevert to previous revisions of a work and assign labels to revisions associed with a particular version of a night. The Visual C++ interface is ag now as part of the PVCS Version

Additionally, Intersolv announced PVCS interface to the Open S

"This will make it easier to work v those tools and use version control — we'll be looking into those soon," said Mike Hall, a software engineer at National Instruments Corp., an instrument or trol and scientific data acquisition co

pany in Austin, Texas. "We initially just The link to Symantee's C++ tools is priced at \$499 per copy; the interface to CFS is priced at \$99 and is available from





Visix releases new version of Galaxy

By Melinda-Carol Ballon

Visix Software, Inc. announced a new release of the company's Galcy Application Environment, which sets up consistent develop ent capabilities across a wide

ed a C++ version of Galaxy. Galaxy is a crosserm develo ent environment for graphical and that oss a range of platrms. The new version works under Unix, Maciniosh, Win-dows, Windows NT. OS/2 and OpenVMS tforms, company

ials said. Uning Galaxy, apand then are

offed to run on the eted platforms, windowing sys-

To create portable applications, laxy abstracts the system seros required by a specific platform. Developers write to a uni-form, multiplatform application

program-ming interface (API).
Galaxy also offers a superset of the capabilities of native tool kits. including those for Macintosh Teolbox, Windows SDK, Motif and Open Look, so developers do not have to manually port applica-tions to multiple tool kits.

abut at Dataquest, Inc., a San Jose, Calif., consulting firm. "They nffer portability at the application cross a broad range of plat-

A number of development groups at J. P. Morgan & Co., a fi-nancial services company in New



res an improved Visual Resource Builder, making it easier to construct the user interface portion

trading systems, according to Sleve Kavanaugh, an associate there. Galaxy lets him move applions from Sun Microsystems,

Inc. platforms to Apple Computer, "In some instances, the appl one need to be running on both

Sun workstations and Macinto es and [Gelaxy] gives us the ability to do that," Kavanaugh said. The re release offers a number of new features and enhancements. These include the following: form multiplatform API.

it's the best thing of its type on the developers to construct net-

rked applications. *Three new managers - Com! Box, Spinner and Drug-for developing drag-and-drop applications. ipport for the Windows Multiple Document Interface. . An improved Visual Reso

Builder, a Galaxy tool that makes it easier to construct the user interface portion of an applica-

> C++ Version Some users were looking insward to the C++ version of Gal-

axy. According to Brian Salzman, a senior programmer at Murphy and Durieu, a New York brokerage house, the C++ version will lead to cleaner programming. in C. Salzman said.

"you have to make sure that you refer-York, are using Galaxy to build ence the pointers correctly when you go through the classes. But in C++, if you've inherited those

as from a parent class, you don't have to worry about it." he Galaxy 2.0 will ship by December for Unix, Macintosh System 7.0. Windows 3.1. Windows NT.

OS/2 Version 2.1 and Open VMS. The prices for the C versi range from \$7,900 tn \$9,600 per developer seat, depending on platform. Galaxy/C++ is priced at \$12,100 per developer seat on all

CASE offering strengthened

By Melinda-Carol Ballou

Popkin Software & Systems, Inc. Last week released a new version of its System Architect (SA) computer-aided soft-ware engineering (CASE) tool, which features improved support for developers creating elient/server applications,

ompany officials said.

Popkin is also shipping links between SA and Powersof Corp.'s Power!

Included with SA Version 3.6 are new network security features that enable project leaders in identity and classify personnel with appropriate levels of authorization. Also included are access control functions, enhanced data mode ing, improved graphical user interface and real-time mod

ing, improved a provider.

The access control functions allow members of a project team to check in, check out or freeze repostiory objects or groups of objects. This gives project leaders control over system development and alprotect the data that they are working nn more easily. "The ac cess control will be useful," said Andrew Renouf, senior informs-

tion systems analyst at Ontario Hydro Corp., a utility in Toronto. Enhanced data modeling with Version 3.0 includes broader sup-port of the database administraon function through date

management system-specific mod-els, support for logical views and the identification of re ween two coun The new SA Browner allows users to search their date. bases to locate diagrams and provide model represen-tions. Users can search through databases for vario

kinds of definitions and then determine where a dic item at data element might be used. System Architect 2.0 will ship in December: A sing

sion for the Windows environment is priced at \$1.8 and the first two copies of the network version cost \$2,940. The OS/2 PM version is priced at \$1,795 for the single-us version and \$3,750 for the first two copies.

Version control CONTINUED FROM PAGE 97

t seeks to address configuration man-ment and version control in client/server environments. CCC/Harvest supports various phases of the applican life cycle, including turnover and migration management and impact analy-sis, company officials said. Project level information and configu

ration management reside in a relational database management system with CCC/Harvest, and version-control data is located in a repository of change infor-

from Oracle Corp., Sybase, Inc. and Informix Corp. by next June, the compe Softool users said they are interest

in checking out the new product.
"We need to work out interfaces with a lab which is 10 miles away from us, and ier for us," said Dorothy Huffman, ins

mation systems manager at the Jet Proisson Lab in Pasedena, Calif., a NASA nearch and devel poment facility. Softool is not alone. To name two oth-

ers, Legent is expected to announce by mid-1994 elient/server versions and API for its Endeavor product, And Intersolv will beef up its application development system tools later this year.

According to Acty, the intersolv announcement indicates that there is a 'very hot marketplace for configuration agement right now. PVCS has been oil for six to eight months."

in the client/server environment, however, it is not always easy to keep both the client and server versions of the products in sync. me analysts suggested that users be

ful in their selection. The technology is, for the most part, new and not fully proven for distributing configuration agement across large, corporate,

at/server environments, they said. 'A next generation of software will aize these problems and come up with a more integrated design from the ground up," Finkeistein said.

Micro Pocus, Inc. has ann sion 1.0 of Remote IMS, a product that altows the development, testing and exce tion of IMS applications on the workstation with access to DMS/ESA databases located on the mainframe

Remote IMS is able to test large and complex DAS databases by creating di tributed IMS systems, copying data bases and testing logical relationships according to the Palo Alto, Calif., firm. Remote IMS comprises the ma

Remote D&S Server and the workstation Remnte IMS Requester.
The Remote IMS Server for IMS/ESA costs \$15,000 per logical CPU. Each

workstation requester costs \$300. ► Miero Poesa (415) 856-4161

Powersoft Corp. and Ernst & Young have announced an interface between Proposed's Propositivides a client/sers er development tool, and Kn Ware, Inc.'s Application Deve

Workbeach (ADW), a computer-ai

software engineering tool.

According to the Burlington, Mass company, the PowerBuilder/ADW interface will allow users to automatically transition required

The interface was designed to improve the productivity of the developer with an an-line, automated interface, as well as erve and extend the investment of training methods, tools and existing

Y and antomate the generation of an ap-plication and DataWindows and Win-dows. Extended attribute tables tion types (domain definitions ed in the ADW analysis model are gred to step ad edit styles in the PowerBuilder ex-uded attribute tables.

nded attribute tables.
The PowerBuilder/ADW interfac costs \$4,000 per developer and is avail-able as a tool option in the Ernst & Young Navigator System Series.

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Management

TUNE IN, TURN ON, GET RICH?

IS executives are building and looking to exploit the techno-infrastructure for future interactive TV services

By Mitch Betts

irms are betting literally billions of dollars that there is a profitable future in interactive TV. The dream is that America's couch potatoes will be able to surf along 500 TV channels, play video games with people across the country, select

almost any movie at any time of day and pay

their bills with a few clicks on the

To make it happen, information systems executives and chief tech nology officers are talking bigtime strategy with the top corporate executives who are cutting deals with Hollywood, telecommunications, computer and cable TV companies on an aimost daily basis.

"This has top-level attention, more than I've ever seen for an 18 project before," says Roy Fraise, vice president of MBS at Cox Rates prises, Inc. in Atlanta. Prater is in charge of upgrading the cable TV operator's wide-area, network to become an information highway populated with video servers for

The much hyped convergence of digital media is also prompting IS executives in other industries, such as banking, retailing, direct marketing and health care, to consider using the interactive TV services as a new channel for reaching U.S. consumors.

Ad your flagor tipa
Avon Products, Inc., for example,
to eager to get two way voice and
video communications cervices
from the new multimedia saliances, Isob Hughes, manager of
telecommunications at Avon in
Rye, NY, asys interactive TV servvices would allow hediquarters to
send out video citys of information
on new products of Avon's a xmy of
door-to-door sales representatives and their customers.

tives and their customers. Hughes imagines a video elip that could demonstrate how to put on a particular facial makeup product and then accept questions about the product. But he really gets excited about the prospect of allowing customers to punch a few buttons to order the Avon product after the demo.

for the demo.

The megadeal that triggered

lion alliance of US West and Time Warner, Inc. to create interactive TV services nationwide by 1908. US West brings to this high-stakes party its expertise in network witching, billing and transaction processing. Time Warner brings its cable TV stations and the entertainment meauves of Warner tainment meauves of Warner

That deal, followed by the proposed merger of Bell Allantic Corpposed merger of Bell Allantic Corpand Tele-Commandactions, inc, (TCI), got the attention of chief information officers such as Martin Joyce Jr., executive vice president for chiest services at Blue Cross/ Blue Shield of Mananchusetts in

Joyne says the insurer could exploit the interactive TV channels to deliver medical advice (such as information about drug interactions and side effects) and marketing programs that enhance the company's public image. Castomers might also be able to call up their medical history, review their claims payment records and even schodule their next visit to the

"We haven't spent any money on tyes," Joyce says, "but [interactive TV] has now entered into our strategic thinking about consumor marketing and services in the

Some hard-core data processing protessionals might scoff at the notion of embracing TV, but Joyce says it is time to take the old IS blinders off.

"We have to be realistic. Home PC-based services failed to get much penetration, but cable TV has the penetration [in consumer homes]. We would be feelish not to

For the ClOs working within the mass media industries, this is a heady time indeed, and their star is rising out of the back office. At New York-based Vincom international, Inc., which owns the MTV,



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Nickelodeon and Showtime networks, CIO Henry J. Leingang was recently promoted to senior vice president in promoted to senior vice president in recognition of the growing strategic importance of information technology (GW, Aug. 16). Similarly, Turner Broadcasting Co. In Allanta recently created in far principal and in Allanta recently created in far principal and in Allanta recently created in far principal and in the control of the contro

movies, news and information that al-lows consumer interaction. "Tomor-row, information systems will become your business," she says. "Unless you realize that, you will not be positioned for the new world."

Hard to handle
One thing is for sure: All of that cou-sumer interacting will require some heavy-duty transaction processing systems to handle the ordering, deliv-ering and billing chores for complex-services such as on-demand videos, house banking and home shopping.

Denver-based TCI, the nation's larg-

ctive TV - somewhat like the

Denve-based TCL the nation's large steadher Youngstomerate, has already started overhauling its transaction-processing systems to prepare for first stops was to create a control lense command, and control center capable of processing 180 pay-par-view transactions per second [EW. April 12].

But that is just a start. Sadd Decker, TCL is corporated were provident for adthe satronomical number of variables in interactive TV — somewhat like the

Tune in, page 104

Management

Tune in

CONTINUED FROM PAGE 108

scity of the Star Ware and program — will require a

out billions of dollars to menitor, and that cuts into profit, and that's ot smart," Decker

ye. Instead, she ste that it might be se to come up with lified pricing mes and bill elec-cally, perhaps us-

e itself. new world of inter ve TV requires se new skills in anologies such as al-time transaction occasing video servg and digital video empression, as well

as an understanding of the enter-tainment business and sophisti-

in other words, this is not plain-anilla data processing, such as eneral ledgers and accounts reable. For example, technolosts on this frontier are addressjats on this frontier are address-gainess such as how neven ustomers who want to watch tocky F at slightly different but verlapping times can do that. Because of the cutting-odge na-ure of the business, Eon Corp., a

ston, Va., start-up firm that will Reston, Va., start-up firm that will roll out its wireless interactive TV service in mid-1994, but had the best tuck hiring technical employ-ees from academic fields that fo-cus on creative problem-solving.

"In a new industry such as ours, every problem that comes up has never been faced before," says b Chiaramonte, vice president

for 18 and product engineering at the firm, formerly known as TV An-

swer, Inc. Chiaramonte, who has already tackled many of the issues facing

the newcomers, developed a hub-and-spoke architecture. "The conr interacts with our service, ch as ordering merchandise from a catalog or getting news on what's happening in Bosnia, and then we need to route that infor-

Will soph

re TV will allow viewers to buy sporting game teteractive TV will allow vi tickets through their TVs

mation to our providers," he ex-A big question at the moment is

how much of the IS work for the new interactive TV services will be done in-bouse and how much will be done by outsourcing vendors. Experts say the cable TV industry now outsources most of its billing functions to firms such as the Ca bieData division of U.S. Computer Services in Rancho Cordova, Cal-If., and First Data Resources, Inc.

In Omaha.

nier executives are beginning to realize that the world of on-demand video and banking will re-quire them to rethink their tradievare mem to rethink their tradi-tional IS strategy, says Bill Battino, a partner at the mass me-dia consulting practice of Coopers & Lybrand in New York.

"Now they're assessing whether those [outsourcing] vendors can continue to provide the kind of support they'll need in the future and whether their own internal management information sys need to become more sophisticated to handle the more com vironment that is developing."

or-break factor in the life of interactive TV? Not really, according to Battis

Marketing and killer applications — hit forms of entertain-ment—will be the critical success factors.

But someone has to make the Hollywood vitertainment work in real life by delivering high-quality video, data and sound and accurate ordering and billing Consumers will

not be happy if their spiffy new TV system switches their m request with another er's or botches the monthly

billing statement. Steven Sieck, vice president for ctronic services research at Link Resources Corp. in New York, says most media companies, in their rush to sign big-bucks alliances and shape the perceptions of Wall Street, have failed to consider tactical issues such as ad-

ministrative systems. "Transactional billing syste and other administrative capabilities are virtually absent from the infrastructure for interactive TV now, so the involvement of tech-nologists who can provide those particularly for the cable TV in-dustry, which is woofully incking that infrastructure today—will be

critical," he says. Betts is Computerscorid's national cor-respondent, based in Washington.



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seeing the accounting. MIS, human resources strative departments, as well s the company's benefits program. Prior to joining Professional Travel, he ed as the corporation's outside busi-s consultant and CPA.

U.S. Commerce Secretary Ross on recently announced the 1963 emai Medal of Tochnology wins, who were commended for their

ng the nine winners were Kenth H. Olson, founder of Digital Equip nt Corp. in Maynard, Mass., who rered a product and process innovation ard "for his contributions to the develouter technology for his entreprene

erican business." Ster L. Robb of the General Ele tric Research and Development Cen-ter in Schenectady, N.Y., was honored for his work in advanced manufacturing chnology. Robb was cited "for his lead-ship in the development and commer-dization of new medical imaging techgies and related manufacturing tives, both of which have improved se's health and contributed to U.S. ed leadership in a high-technology

os E. Joel Jr. of AT&T Bell Labatories in Murray Hill, N.J., was warded the Medal of Technology for his ek in product and process innovation He was cited "for his vision, investiveness and perseverance in introducing technological advances in telecommu cations, particularly switching, that have had a major impact on the evoluti of the felecommunications industry in the U.S. and worldwide."

The National Medal of Technology is by the president of the United States for extraordinary achievements in the com-mercialization of technology or in the depment of human resources that forter technology commercialization. Si the first awards were given in 1985, 84 individuals and three com received the National Medal of Technol-

rk Gross has been a al director of KPMG Peat Markwick's Health Care Information Technology practice in Chicago. The announceme was made by John Gannon, KPMG Peal Marwick's managing partner Prior to joining KPMG Peat Marwick, Grees worked at SMS Corp., where be served as vice president of marketing for two years. He was previously the national director of health care information technology at Ernst & Young

Patricia R. Malloy has been promoted to ector, information services, at Sisters of the Serrowful Mother in Milwaukee, the parent company of seven Midwestern

Prem Mehra has joined Anderson Consulting in Chicago as an associate part-

ner. Mehra had been with IBM since 1970. Nolan, Norton & Co. has app as a spokesman for the database man-

agement system DB2 Etienne Droulez has joined The Clothestime, Inc. in Anaheim, Calif., as director of management information systems. Droulez will be responsible for information systems, including applica tion development, computer operation

in-store systems, micro-applications

Charles A. Raz as director of its New

In his new position, Raz will work with managing director Ira Peinberg to ex-pand the New York-area information technology consulting practice. Previously. Raz was a managing consultant at

an, Norton is a wholly owned sub sidiary of KPMG Post Marwick, based in



Management

Calendar

NOV. 7-NOV. 13

1993 Info/Tech. Phoenix, Nov. 7-10 — Contact:

tact: Managing Apple Computers in Infor-mation Systems (MacIS), Mason, Ohio (M3)

Park Rodge, III (199) 803-8124. Fourth International Conference on Applications of Software Necessment's p. Orlando, Pla., Nov. 7-10 — ConJacksonsviller, Pla., 1994 (2004) Engineering, Jacksonsviller, Pla. (1994) 200-84239.

ICCAD '93. International Conference on Computer-Added Design (ICCAD), Santa Cinra, Calif., Nov. 7-11 - Contact: Association for Computer Ma chinery, New York, N.Y. (212) 859-7440.

First Annual Pan Am IDI Usors Conference and Ex-Mibit. Orlando. Pla. Nov. 8-10 — Contact: EDIA/Electronic Data Interchange Pan Am, Conference Registrat, Alexandria, Va. (700)

Pacific Region DB2 Conference. Sydney, Aus

So., Nov. 10-12 — Contact: International era Group, Chicago, St. (312) 827-6777.

syth Annual Eastern America HCR/ATATCamputer User Contenues, Lake Harmeny, Pa., Nov. 11-12 — Contact: Frank Whalou, Tinius Clinen Tosting Machine Co., Willow Grove, Pa. (215)

NOV. 14-NOV. 20

sath Annual Electronic Document Sy once & Eshibit, Denver, Nov. 14-19 - Contact Xplor International, Torrance, Calif. (310) 373-

Kolor '93. Deaver, Nov. 14-19 — Contact: Xplor International, Terrance, Calif. (310) 375-4240.

Marketing the IS Grganization internally. St. Lou-is, Nov. 15-16 — Contact: Ourliette & Associates, Bedford, N.H. (683) 625-7373.

E-Comm '93. Atlanta, Nov. 25-Dec 1. — Contact: E-Comm '95 Conference, Dallas, Texas. (214)

Fearth Annual Computer Fax Conference. Mon rey, Calif., Nov. 36-Dec. 1 — Centart: BIS Strategic Decisions, Norwell, Mass. (617) 982-

DEC. 5-DEC. 11

Database Marketing Conference & Exp. Orlando, Pla., Dec. 5-7 - Contact: The Nation Center For Database Marketing, Stamford, Conn. (212) 972-2410.

Lotus' Hotes Goers Conference, Lake Burea Vis-ta, Fin., Dec. 5-0 — Contact: Letrosphere '10', Sudbury, Mass. (508) 443-1457.

Computer Measurement Group (CMG): Managing the Wave of Technology, San Diego, Dec. 5-10— Contact: Computer Measurement Group '80, Calenge, IR. (708) 655-1812.

Wireless Datacomm '93, Washington, Dec. 6-8 — Contact: Communications Events, Inc., Norwalk, Conn. (205) 847-5131.

ercing the IS Function." San Fran Dec. 8-9 — Contact: International Quality & Pro-ductivity Center, Upper Montchair, N.J. (201)

The Outcoming Conference: "Opportunities, Sirutugles, Resilies," Boston, Dec. 5-0 — Con-tact: Digital Consulting, Inc., Andover, Mass. (205) 670-2690.

stabase World. Chicago, Dec. 5-10 — Contact: Digital Equipment Corp., Andover, Mass. (508)

DEC. 12-DEC. 18

Lap and Palestop Experition and Conference. Toronto, Dec. 13-14 — Contact: Laptop Expensitions, New York, N.Y. (212) 682-7968.

bject World. Boston, Jan. 10-13 - Contact: IDG World Expo, Framingham, Mass. (505) 878-



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STRAINED RELAMBLE

Bill Gates and Steve Jobs may have a lot in common — they're both PC pioneers, college dropouts and rich. But that doesn't mean they have to be nice to each other.

BY RANDALL E. STROSS

epetition of the Macintosh success (with Next, Inc.) would have been diff ficult enough to schleve even if Stree Jobo bad made the correct call on every decision that came before him. He failed, however, to appreciate fully the timportance of callsting the outside support of BIO dates' Micro-

soft Corp. or a similar software company to ensure that there would be plenty of software available when a new computer

This is an excerpt from Randall E. Stroos' forthcoming book Netw John and the Next Big Thing to be published by Athenoum in late November. (Copyright 1963 by Randall E. Stroos.) Stroos is a professor of laternational business at San Jose State University. standard, incompatible with existing ones, was introduced to the public. Gatev "willingesse to begin work on activate development for the Marcintol price to the Introduction in 1984 had been instrumental to its success, but the price to the Introduction in 1984 had been instrumental to its success, but the success that the price to the Introduction in 1984 had been instrumental to the success that the success that the price to the Introduction of the Introductio

lobby for a half-hour while Jobs moved conspiceously about the building, letting be visitor seem, about the building, letting be visitor seem, about abordinates were amused to see Jobs deliberately keep factor waiting, which was a way of Next. toling distressort that only about 100 per letting the seem of the property of the propert

Strained relations, page 110

Strained relations

CONTINUED FROM PAGE 109

power to direct the PC industry, which had grown manyfold since their earlier collaboration, when Jobs was still at Ap-

pile. When abots finally unweited the Next machine to the general public in him 1910. Cases until with deviation beat all 1910. Cases until with deviation beat and the second of the second of the second for a final deviation of the second of the forward "Andred short the Next computer of a fisk drive, which was new for PCs and to make a proper second of the second of the lapaneous, Cases newerd. "Anythory can write Seays of short." (First the record, the check west to Seas, next Story 18 and a blanch design did not improve him, etal shade design did not improve him, et-al consistent of the second ware for Jobs' new machine?" Develop for 187 Hips ion al.

The industry consumed these remarks as detectable morresic, it also sew them as understandable, given the many threats that Microsoft already faced on a number of fronts, from a strained relationship with IBM and legal conflicts with Apple to uncertain prospects for new software called Windows and now Jobs me washing, which invited the world to abandon the software the Macintosh provided and use new standard.

Next had continuously secured the imperant mature of Microsoft's most important partner—IBM, no less, in October 1868, one industry amply went to far as to say that the new IBM/Next relationship 'was the higgest risk this Microsoft has, and Guicos in doing all be can to underraine it." The public feed between Gates and Jobs continued on through the following year. Gates dismissed the new technical



1975 Bio Gates and Paul

1986 Getes, 30, debu on the Forbes list with share worth \$315 million. 1991 Listed No. 2 m

1992 Tops Fortes

1993 Estimated worth

drawning about is selling software, not stock. § § (Hard Drive. by larges Wallace

and Jim Encloson.
HarperBasiness, 1992)

Features that the Next computer boasted as "truly trivial," and later, when Gates and Jobs found themselves sitting on a

dais at a PC industry meeting, the two

traded shots over the head of the hapless

vino, who sat between them. Can

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said he felt like he was in Beirut

entative from IBM, James Canna

HASEY JOBS

1977 Steve Jobs and Ster Wearner, move Apple from a gar to an office.

> 1982 Jobs. 27, listed on the Forbes 400 list with Apple stock valued at \$100 million.

1983 Jobs' stock hits \$225 million.

Computers and society are out on a first date in this decade, and for some crazy reason, we've in the right

(Rolling Stone, Merch 1984)

Ag Day Deleven, 1997

It was Jobs, however, more than Gitte

who was most damaged by their estrangement. When Gistes shunned the Next computer, Next was desprived of Microsoft's considerable resources for new nottware development, which it desperately needed. And Gates' cold responsealso sent a message to other interested parties that Next's place in the PC galaxy.

would be marginal.

Everyone knew that Gntes took a considerable risk in backing the Macintosh when it was first introduced. Thus, his reteast to back, Jobe this time was read as evidence that Next would be hobbled by a crippling handienp with which Apple had ever had to controd.

Pivil, Jobs was neconcerract. His motto was "Build it and they will come." But hardly sayone came when the machine was introduced in 1988. Nor did they come in 1988, Jobs was no stow to perceive how grave was the failure that it was not until 1990 that he threw out the old plan and cobbled together a new one, and another raile us to the

Balancing things out

[But] Jobs has a strongth that has helped redress the imbalance of power and money that had come to separate the two boy wonders: Jobs was the revolutionary, the person who had staked out for himself the mission of coaxing the world along with him to take great leaps forward in

computer technology.

Gates, in contrast, stood by what he called an evolutionary approach, improving existing software incrementally and permitting computer uners to keep their older PC longer. When Microsoft in-

troduced a new kind of software program, more often than not it would be deeply flawed. But successive versions would eliminate the problems, and by dint of steady investment and perdistence, the program would mature into a

It is fitting that Jobs and Gates he treated as a royal pair. The pattern that the two have set is this: Jobs blazes the trail, and Gates comes behind, incorporating Jobs' revolutionary leap in more modest fashion but one that appeals to the millions of computer users who are related and to detain a part of the project and to detain now for the millions.

with mission of compared water and early with the compared water and place got legether in 1981 at a John Issues for a Phrinten seagution story on the consolate of the 1981 at an extra seague of the 1981 Personal Comparier, trade to the compared water and the place of these who made compariers themselves was alreadily wetders. Blush a shousce from the brittledge owner story for its own Personal Congapiter and the substitution of 30-th sounces from the brittledge owner story for its own Personal Congapiter and the substitution of 30-th sounces from the brittledge owner story for its own Personal Congapiter and the substitution of 30-th sounces from the brittledge owner story for its own Personal Congapiter and the substitution of 30-th sounces from the story of the story o

So, too, was the softening of contentions between Jobs and Gates themselves. Jobs still hoped to called Gates in his cause, and Gates, for his part, no longer had as much reason to be consormed about looking BM's monognasses commitment to Microsoft; the two companets' formerly close relationship had ruptured, and it looked as if Microsoft was in a much better position after the

In 1888, when it appeared that IBM and to the sort and a new standard for its own computers. Gates had deristively dismissed Next. Three years taket alignments had changed to such a degree, and biscroofs is power had grown to such an extent, that Gates could afford to talk with Jobs about Next without the rancor and perception of opersonal the rancor and perception of opersonal the rancor and perception of opersonal could be rancor of the rank of the rancor of th

Each declared to the other that the prese had invented animosities and had evented by the second of the second of the evented had been as the second of the required histories anneals but were fair inflictations that, at least at that memorals in 1801, both powered sainty to extend the second of the second of the second that inflictation that all the second of the third of the second of the second of the third of the second of the second of the inflictation of the second of the second conversation to photoe, which were the second of the second of the second that Microsoft would consider writing obstace only for a compater that had for lives, was impossibly for off, in fact, to date. North as noted approximately

to univ.

At the end of their chai in 1981, however, John had failed once again to figure the failed once again to gate bein, and by the next year was speaking publicly about the dire threat posed to the world by the "Microsoft monopoly."

When Jobs appeared at a meeting of the Bay Area Next Group [in 1693], he hrushed aside suggestions that Next should consider licensing its software to Microsoft. It made an sense, he said, to sid the execution.





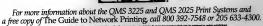
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inding computer talent isn't as easy as it used to be. In fact, there was a time when you'd just run an ad in the ocal newspaper and you could make a hire without waiting

too long or spending too much.

But times have changed. And like so many facets of today's business, so has the effectiveness of traditional recruiting

What's more, many of today's recruiters don't use today's most efficient methods — methods that save time and money for some widely unknown reasons.

The supply of qualified professionals isn't meeting demand



that the number of college students characteristic that the number of college students characteristic computer carees is downword-ing computer carees in story to the control of the college students of the college students

Ads in local papers don't reach your major hiring market anymore

That's because they generally reach "active" job seekers—those who actively seek out the local newspaper to find jobs—and who a recent Computerworld job satisfaction survey found to represent 2 in 10 of today's com-

puter professionals. The study also found that 7 in 10 of today's computer professionals are "pas-sive" iob seekers — those who



would consider new job options, but likely never look for them in the local newspaper. (The remaining small percentage are "non-movers" content with long-term jobs.) In short, this means that your ad in

The short, this means that your ad in short, this means that your ad in today's local newspaper reaches no more than 20 percent of today's computer job seckers. Walt's worse, if reach far more job seckers, your to cal newspaper expenses are as inefficient as their limited audience.

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Computer Careers

pt it as a re of getting ahead

By Lealie Goff

IT'S THE WAY OF THE WORLD: You gain

ty and influence in the orga d overall job satisfaction. At the same

ne, they struggle with giving up their ily technical responsibilities and the lifting relationships with former peers who are now their di-

"Given the technology tread-nil that most IS staffers are on, it's a difficult transition to make," says Richard DePiore, president of Interpersonal Technology Group in Rockville Center, N.Y., and the

der of a "Transition to Management DeFlore says many recently pro first-line managers have trouble letting go of their old jobs because of their love

IS career in the first place. "It's hard keeping your hands off the de-on," says Daniel Townsend, menanology Services, the IS division of ow Corp. In Overland Park, Kan.

Yellow Corp. in Overland Purk, Kan.
"I wanted to try to do both," Townsend
says. "I was trying to remain a technical
person more than I was trying to become
a manager. Ultimately, you have to sever
the cord and have faith in your people." Townsend says after becoming over-burdened at work, he grew to see his poon as that of a catalyst: "I have to mo-

tivate my staff to be conscious of doing a Mary Hopkins, IS manager at Herr-Yoss Corp. in Callery, Pa., says she moved into IS from socounting because of the into

d opportunities for women in management, but she ses "the element of creativity when you sit down to write a program from scratch. I still do the system design. but I let them write the program. I'm just

giving them the pieces to work with." Learning to give up the close con with technology is a double-edged sword. As they become more adopt at managing de, managers say they have less time to keep up with advanced and

emerging technologies, which creates a different set of anxieties.

When I have less time to work on tec nology, I feel a little more distanced from the state of the art," says Rick Ulene, ager of information services at Adranced Sterilization Products, a division of Johnson & Johnson Medical, Inc. in ir vine. Calif. "That's anxiety-provokis because, in theory, the people at the top of IS should be the most knowledgeable about what's out there."

If moving into management requires you to give up what you love most and, in the process, acquire a whole new set of anxieties, why do people do it? in most organizations, moving into management is the only way for IS staffers to adv While some companies say they offer bual career paths - one for aspiring

managers and one for IS staff members who wish to remain technical but want to advance their position — DeFiore says the technical path seldom extends beyoud the group project leader, a low middle management position.

agement seemed the way to go, an musagement seemed the way to go, as it was something different," says Robe Duncan, 18 manager at the Price Canc Co. in Ennass City, Mo. "There wasn't lot of choice at the firms I've been in."



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From LAN neophyte to expert ONE IS PROFESSIONAL S TRANSITION

By Daniel Douglas

Whether you want to or not, you could be asked to administer your company's LAN, if your notworking skills are limited, you may goestion whether to accept the challenge or bow out gracefully. Three years ago, I faced a similar situa-tion, but I took the challenge, and I'm still

here to talk about it. My company was installing a LAN at two remote offices. I was asked to provide LAN training and assist the network nagers with software and hardware tion, systems administration and PC configuration at both sites. In one month, I needed to be up to speed so No-vell, inc.'s NetWare management, net-work performance monitoring and hard-

My only network experience came from working one year on our beip desk for our 500-node NetWare LAN. I could in-stall and configure PCs and noftware and do some programming, but I knew little of what went on in a octworked environ-

One of my first tasks was to set up a modem pool, which I had never done before. I had to learn the basies of NetWare Asynchronous Communications Ser-vices (NACS), the software that allows or-

dinary modems to be shared by network users. I also had to set users up on the LAN, install gateways, ensure system ac-curity and keep up with LAN backup. Since I already knew the basics of PC-to-PC communications, I focused my attention on learning how to use the commu-nications packages and modems across

a network.

At the same time, we were setting up an MCI Mail gateway to our electroniomal system, adding documents from the old system and installing hardware I'd never seen before to access our IBM Sys-

Boing the homework I started by reading Novell's manuals for NACS and the related hardware. For manuals gave me the installation basics but glossed over the administration of

I also logged onto CompuServe, read be messages in one of its forums called letWire and did a specific search on the

setup and administration of NACS. For starters, I wanted to know whether users could be restricted from running multi-

ple sessions, tying up two or more in dems in the pool. When I finally set up the communic When I finally set up the communica-tions software and the wide-area net-work interface module board for the NACS, I realized that setting up modem pools wasn't as difficult as I had thought. The MCI Mail galeway setup was also

ne NCI man galeway netip was also easy — I simply read the documentation and called the vendor's support line. The most challenging task I encoun-tered was with the router for the WAN connection between all the offices, which was to link the E-mail and the billing sys-tem. I had on the house with the called and the billing system. I had no clue how we made or main tained the connection, but our syste analyst guided me through the basics

Stick to the critical My biggest mistake was trying to do too much at once. Instead of sticking to the

critical invoirs, létrayed.

The Instances, laterquée to change sa airvady installée and working application production de la composition de la composition

Deuglas is a LAN analyst at a major law firm in Wankington. He can be reached on CompoServe at 71630,2811.

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Ifound the forums to be helpful, especially when I was updating Novell's driver software, which can be downloaded from Compu-

Reed. You've probably heard that vendor manuals, especially Novel's, are disorganized, but they got me through the basics of setting up its NetWare NACS and gave a bare bours description of NetWare system management and the use of related utilities.

a Attend seminars and user groups for your network type. I knew at some point our LAN would migrate to a Windows

ont end, and I got advice on what to expect.

a Concentrate on the mission-critical. I needed to stabilize the installed software, ensure net-work security and continue in-stalling software and hardware.

off it ion't broke, don't fix it. I wiff that's broke, don't fix it.] to tweak the system so that when uners incorrectly entered their log-one or passwords, they returned to the log-one prompt. Instead of making it easy, bowever, placed them in a continuous loop that kept them from logging on at all. I should have saved this until I had time to do it right.



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How open is an open system? You might as well ask how many anreis can dance on the head of a pin. Both dely an easy answer. Yet with every ware and software vendor claiming es and even patently proprietary systems waving the open banner, every pany must find a mechanism to define and determine the openness of any posed solution.

ently, Dataquest, Inc., a technology research firm in Framingham, Mass., stled with the problem in a report on open systems service and support. Not surprisingly, it found that "open systems" means something different to every eustomer.

Users generally adopt one of three definitions of openness: ·Systems that comply with widely accepted public standards such as TCP/IP

*Systems that comply with a widely ac cepted but proprietary environment, such as Windows, Novell, Inc.'s NetWare

or IRM's AS/400 roperability — sys-·Openness as in tems that interoperate with whatever system the organization currently has For coample, Alamo Rent A Car, Inc. in

Fort Lauderdale, Fla., falls squarely into the second camp. "To me, popular is more important than open. If a platform is popular, it has lots of vendor support, lots of add-ons and peripherals. If I were betting, one popular beats three ope any day," says Tom Loane, vice president Information systems managers cut through the hype of open systems promises

Based on their popularity and wide spread use, Loane says be considers Ala-mo's CICS systems, PCs and AS/400 to be as open as anything else, "although that's not the classic definition," be concedes. But each group of systems has many hardware and software options available from multiple vendors.

Today, users have grown skeptical, if not downright cynical, of vendor claims of openness, interoperability and com-

Masking the truth We're not really getting open syste

from vendors. At best, we're getting APIs that mask proprietary structures. We don't even ask vendors to provide open systems anymore," says Joseph Vincent, ector of technical services at Huma na, Inc. in Louisville, Ky.

what constitutes an open system, information sys-tems managers have had to relop their own ways to claims. Some put the burden of proof on the vend others rely on detaile cifications and still oth-

rs do informal testing or go so far as to organize fulllabs. Each approach, how ever, presents problems (see chart at right).

Most companies rely on cations. "In a very eral sense, we've de ed open as Unix, and we find [System V Release 4] pretty predict-able, "reports Dave Slayter, project load-er at Liberty Mutual Insurance Co. in Boston. But just specifying System V Ro-lease 4-compliance doom't guarantee easy interoperability. Liberty Mutual blems. In response, the company ndardized on IBM's AIX.

"Open can mean many things, therefore you need your own benchmark," says Richard Lester, vice president of inrmation services at Associated Grocers, Inc. in Scattle. He says be believes the best benchmark to measure op ness is compliance with the Open Soft ware Poundation's Distributed Computing Environment (DCE). The only oblem is that very few products are DCE-compliant. Often Loster has to set-tle on "a commitment to do it within a

year or so." Because specifying standards alone doesn't guarantee interoperability, it must be combined with actual testing "We are moving to open systems, and we are starting by specifying standards: Unix for database servers and TCP/IF [for connectivity]," says Greg Chetel, di-

rector of systems planning and research ensuring open systems

IS THAT SEVERAL APPROACHES TO ENSURE CE WITH THEIR SYSTEMS PLANS, EACH HAS

beware evasions

at Gillette Co. in Boston. However, Gil-lette has found that although "everybody claims openness and compatibility with your standards, the only way you can really tell is to try it."

Few companies today, however, can at ford an extensive enough systems : search and development effort to all for comprehensive compatibility tests says Bob Walsh, principal at Pract corp. in Mansfield, Mass. Instead, com-panies are conducting informal testing as part of system implementation on

ropping the burden into vendors' laps. Oillette, for instance, has set aside a small group of facilities to test syste and leaves it to the project team to er sure that the technology works together.
Ultimately, managers try to throw the
open systems ball back to the vendor. "If

they want the order, they have to make sure it works," Loane says.

Radding is a free-lance writer in Newton, Mass.



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Additité Computer Corporation 24-37
ALLE Business Communications
Services 25
Augies 25
Busines 78
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Chipcon Copp. C3
Chipcon Copp. C3 81, Systems 84-65 LD. Edwards 60/61 Knowledgeware, 62, 63 Lextrack, 76 Lotus Development Corp. 25-35, 60-51, 58-55, 74-75, 60 Micro Focus 11, 44 Microsoft 21-23 NCR 54-65 Overcent Corp. C3
Command Technology 15
Compact Compact Corp. 18-15
Compact Associate 3, 4
OV Assistery Products 127
OV Companies for Cassister 57
OV Companies for Cassisters 77
OV or CO 43
Del 18
D Ico 54-66 Irocie Corp. 6, 112 Iswersoft D4 Powersoft C4 Progress Software 98, 99, 161 (945; Nr. 111 Rosis Systems 24 SAS Insolate 54, 67, 73 Sim Technology Summit 64-68 Sun Microsystems 64-63 Sybaso, Inc. 13 Sybaso, Inc. 13 Dell 82 Digital Foliament Corp. 63-84 DMC Corp. 69-81 Eache Dectronics 166 Fischer International 78 Gupta Corp. 166-987 However Packard 47, 49 SML 68-81, 69 Innovation Data Processing 7 Internation Corp. Synoptics \$2-03 Tophiba America \$6-01 Unitys \$65 Universal Data Sussesses al Data Systems 20 on Group 116

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Page number refers to page on which story begins

21 CenNet, Inc. 53 3 Cen Corp. 10 3M Co. 14	Delphi Consulting Group	Lockbeed Missiles and Space Co	46
Com Com	Deirina Trebnology	Loral Accounses Corp.	14
MC- 14	DHI. Almays. Inc	Loral Space Systems, Inc.	24
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Α			216
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Friday Stock Ticker



Creative arguments

The company that makes the Sound Binster PC add-in eard
— Creative Technology (CREAP), parent of subsidiary
Creative Labs — has enjoyed an upward surge on the slock

Creative Technique on an area of a 179 of the rapidly expanding I/O mond and market and also does a healthy expanding I/O mond and market and also does a healthy expanding I/O mond and market and also does a healthy expanding I/O mond and market and also does a healthy expanding I/O mond and I/O mond I/O mon

ally seeast the newaletier expects the price to crop, Medic Vision's financial report last week provided evi-ence that Creative Technology does not have a strange-old on the sound market. Medic Vision's sales were up-bout 400% over last year's third quarter. The company solated earnings per share of 56 cents, company with 3 note in 1902. Medic Vision's stock hiked up 25% to reach 35%

e day of the announcement.

However, Alex. Brown & Sons, Inc. analyst Steven Enke-uzi said the market is growing so rapidly that Creative behaviory can still hit Wall Street's high expectations even ough the company is losing market share.

"It's hard to see much crosion in a market that's growing a triple digits," Eskenani said. "This is Creative and Media

marps organ, "execute and Media. "This is Creative and Media. Vision, not Creative vs. Media Vision," he said. Extenses also noted that the company has moved this year to broaden its product line, acquiring videoconferenc-ing vendor ShareVision and professional audio equipment makes C.M. Strategie.

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		47.70		50 11	1.63	4.7
200		6.75	Agen, Communication Comp. (10)	2.27	-0.54	23.1
Ιτά	24.50		BARROW SHEPFARE INC.	15.00	0.00	4.0
2			Best Brawene Comp. 04	62.88	4.25	4.3
			SELLBOUTH CORP. 04	63.25	0.13	4.2
m			Bott, Stanger & Street,	1143	1.00	9.4
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175	179-00		CARLETOEN SVETEMS	97.25	9.0	7.7
2222			CENTICEAR COMMUNICATIONS	95.00	4.0	1.2
			Curcoa Coer		3.2	3.2
	55.25		Coco Systems let.	46.75	1.70	4.0
	17.75		COMPRESSION LANS INC. 24	15.99	1.00	14
iiic .			Cata Surren Cour	2.50	0.00	22
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		2.25	BALMA SYSTEMS INTO THE BOST COMMUNICATIONS (III)	136	4/3	41.0
	73.13	14.43		70.98	713	2.1
	9.50	4.75	Experience (at '), but,	17.50	2.50	167
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mi.	94.75	64.75	HEICENSSON CONTRACTOR CONT.	28.56	625	-14
210	29 88	14.81		2,73	414	41
370	6.59	1.50	Microcourter.	100	425	
370	24.25		STREET COMP.	7.50	6.5	
210	19.00	4.50		9.00	6.59	5.9
m	12-35	5.30	HETBORE EQUIPMENT TECH	9.00	6.50	1.5
310	20.13	8.00	REPROPER GORGERAL	24.99	0.25	10
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				77.73	2.30	
				84,50	-1.50	-33
210	41.00		Sam Michory's as Inc.	24.75	1,36	3.3
MYS				40.75	3.63	9.5
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			Convertements	5.25	-913	-2.1
QTC	6.13		CRAYCOMPUTER	2.12	0.00	84
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MYS.			Convertements	5.25	413	-2.3
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ent	23.00		Harviers	5.25	6.00	6.0
			McArex Associates	5.75	-0.25	42
				6.54	643	
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			Micro Feccio (L)	34.00	0.63	
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ġtć.	25.00	7.23	PLATERUM TREPROSPOST (L)	2.21	2.63	23.3
970	41.50	32.25	PROGRESS SETTEME COST.	51.66	6.13	90.9
210	7.36	1.54	QUARTERBOCK OFFICE Ses. (C)	2.21		
OTC	32.00	16.00	Except Schedulers Inc.	257	2.00	3.2
arc	11.30	4.25	dayners.	12.21	4.15	44
986	15.75	263	Gens Syrvest		4.13	43
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orc	15.60	2.63	Serrmant Tracentees inc.	15.86	6.13	217
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ATTS.	21.00	17 63	Secretar Servanes Inc. (1)	13.6	-0.50	34
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Computer Industry

Merger boosts fledgling middleware market

Momentum, Horizon union brings together opposites

By Lynda Radosevich

The small, complicated yet rapidly emerging middleware market took a big step last week when two privately held "mes-

ham, Mass., and Momenum Software Corp. in Englewood, N.J., will form a company called Momentum Software

orp., located in both places. The entity combines Herion's experience in developing ser-to-peer, mainframe-based experience in Unix-oriented eware for building cross-

platform capabilities into appli-Company officials said the firms joined forces because each was planning to develop what the other already had.

Capital idea

the \$2.7 million that Momentum ists in return for slightly less



than half of the cor money will be used to finance sing costs, future developent and sales and marketing efforts, said newly appoint

President Larry Duckworth. Prior to merging, each compa-ny operated at break-even revenue for the past two years Duckworth said. Each started

tions to communicate when the networks are different, the hardware is different and the

care of translating protocols. On the application side, it gives programmers one development are small-scale because interface. This is different from other types of middleware that tal may be the strongest ent

are used to develop cross-plat-form capabili-ties for a single

two companies

said they support 22 desktop and network operating systems Overall, there are roughly a

dozen players in the message-oriented middleware market.

market is in its infancy, but Digi-

"It's

don't just need

middleware,

you need the integration

skill."

-John Mann.

The Yankee Group

complicated because you

the variety of expertise and skills needed, Mann added.

Select calendar third-quarter results



Sometimes for better, sometimes for worse, weak European sales, downsizing and desktop price wars an shaping quarterly returns.
Leading the way in the PC sector, If not the computer industry, was Compan
Computer Comp., which more than doubled its third-quarter revenue over lost
year, posting a 64% rise in sales (see story page 1). The company clied unex-

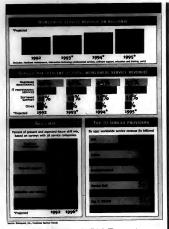
pectedly strong overseas sales (up 37%)

The European market was less kind to **Digital Equipment Corp.**, which reported a slightly higher than expected less and a sharp decline in revenue, including its first drop in its services sector, for its first fiscal quarter. PC and Alpha-based sales were bright spots. An edgy Wall Street will be watching the firm clos

Big iron software sales growth buoyed revenue at Computer Associate stienal, Inc., which reported an 86% increase in net income and a 20% in in revenue for its second quarter, CA's midrange product sales leaped 115% year-to-year, while its mainframe revenue, which represented 81% of total n year voryen, where its meanname revenue, which represented bits of cook revenue, surged 20% for the period. The company clied customer acceptance of its 36 month-old flexible Eccensing agreements and its services team concept.

Despite its eighth consecutive profitable quarter, which saw a 3 % increase

Despite is eight consecutive porticule queries which have a 3 y's known to set comme querie have market or year gold gainer Gen, viewmen dropped to the comme queries and the comme dropped to a self-healthy gain. The Microsoft Gen, juggement rolled fon, albeit it is slightly sleen yout. He company fiscal and expare revenue person fleet as a single yie deep year. It is suited by the proper self-healthy and to revene person from the competition to said a 5%, is york, plus, Market year for love each pressure from competition to said a 5%, is york, plus, fiscal year of the comme person from the comme to said the self-healthy and the comme of the comme of the comme of the comme term of K polithers grown or CM is finite revenue display 5% to \$5% for the quar-ter. A congregating feeting between the comme of the Quattro Pro spreadsheet last querter, pending a new release. It reported a 16% drop in revenue for its second quarter. A \$1.8 million net manked the company's third consecutive profit following a massive loss in its third quarter a year ago.



The 5th Wave by Rich Tennant



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